

**U.S. Department of the Interior  
Bureau of Land Management  
Glenwood Springs Field Office  
50629 Highway 6 & 24  
PO Box 1009  
Glenwood Springs, CO 81602**

**ENVIRONMENTAL ASSESSMENT**

NUMBER: CO140-2005-047.

CASEFILE NUMBER: COC-27867, COC-62160, COC-27868, COC-62161, COC-62162.

PROJECT NAME: Wheeler to Webster GAP 2005.

LEGAL DESCRIPTION:

T6S, R94W, sec.16, 17, 18, 19.

T6S, R95W, sec.20, 21, 26,27,28,29,31,32,33.

T6S, R96W, sec.25, 26,34,35,36.

T7S, R96W, sec.1.

APPLICANT: Williams Production RMT.

DESCRIPTION OF PROPOSED ACTION AND ALTERNATIVES

Proposed Action: The following sections describe the 2005 Wheeler to Webster Geographic Area Proposal (GAP) Environmental Assessment EA for natural gas development by Williams Production RMT Company (Williams). This action tiers the Wheeler to Webster Geographic Area Plan EA completed in July, 2002. Nine locations within the GAP boundary were constructed prior to the 2002 Wheeler to Webster Gap and completion of the 1999 Supplemental Oil and Gas Environmental Impact Statement (EIS). All anticipated environmental impacts from this proposed action (original GAP wells and those older, pre-GAP wells, were analyzed within the scope of that GAP EA.

The GAP area is roughly defined on the west by County Road 215 and Wheeler Gulch, on the north by the rim of the Roan Cliffs that border the Colorado River valley, on the east by Webster Mesa, and on the south by I-70. The GAP encompasses approximately 22,500 acres, 15,000 of which are under the jurisdiction of the BLM (see appendix A and B). Within the GAP boundary, 12 new (but previously approved) surface locations and 47 existing surface locations will be utilized to access a total of 213 bottom hole locations for natural gas wells, all to be directionally drilled from existing locations and new well pads. It is important to note that this proposed action will create no additional new ground disturbance beyond what was already analyzed in previous Environmental Assessments

The major elements of the GAP are presented below under Development (Construction/Drilling/Completion), Production (Operation and Maintenance), and Abandonment. Approval.

#### Development (Construction/Drilling/Completion)

Williams proposes to drill up to 213 natural gas wells within the GAP during a two-to three -year program beginning in 2005. The plan proposes to drill these 213 new wells from up to 12 previously analyzed new surface locations plus 47 existing well pads for a total of 59 well pads. The wells will all be directionally drilled. All of the 59 well pads would have multiple well bores. Of the 213 proposed wells, 19 would be based on 40-acre bottom hole spacing, 38 would be based on 20-acre bottom hole spacing, and 156 would be based on 10-acre bottom hole spacing patterns. The Colorado Oil and Gas Conservation Commission (COGCC) approved 10-acre bottom hole spacing in portions of the Piceance Basin through orders issued in 2003. A Memorandum of Understanding exists between the COGCC and the BLM that signifies BLM's acceptance of the spacing order and to develop the leases addressed in this EA on a 10-acre density (down hole) basis.

All of the 213 proposed wells would be drilled on existing Williams's leases. Combinations of the following development scenarios are proposed:

- Forty-seven existing well pads to obtain 180 bottom hole locations;
- Twelve new well pads to obtain 33 bottom hole locations; and
- Multi-well locations where up to ten additional wells would be drilled from a single well pad.

If fully developed, this proposal would result in 213 new bottom hole locations, but as previously stated, only twelve new surface locations would be created. Williams expects to drill up to 30 of the proposed wells in 2005 and an equal or greater number per year in subsequent years.

As of February 21, 2005, approximately 483 wells (177 Federal wells, 306 Fee wells) already exist within the GAP boundary. These 483 existing wells share well pads and utilize only 265 total surface locations, of which 75 are on federal surface and 190 are on fee surface

It is possible that Williams could drill fewer wells than those described in the planning and analysis process because of geologic uncertainties and market uncertainties.

New wells would be drilled to an average depth of 6,500 to 9,000 feet. The typical natural gas well in this GAP would require about 15 days to drill and 30 days to complete. Pads with multiple well bores would be occupied for a more extended period of time, depending on the number of well bores. Multiple well bores from a single pad would be drilled consecutively and completed during one period of development for that pad. Multiple wells would be drilled from both the 47 existing and the 12 new well pads to minimize surface disturbance.

Surface soils would be stripped and stockpiled on the pad. Excavation of pits and any cut slopes would be conducted by heavy equipment. All pits, cellars, rat holes, and other bore holes

unnecessary for further lease operations, excluding the reserve pit, would be backfilled immediately after the drilling rig is released to conform with surrounding terrain.

A minimum of two feet of free board would be maintained in the reserve pit, between the maximum fluid level and the top of the berm. These pits would be designed to exclude all surface runoff. Reserve pit fluids would be back filled within one year of construction or at the end of the succeeding summer (August 31) to allow for evaporation of fluids, unless an alternative method of disposal is approved. The backfilling of the reserve pit would be done in such a manner that the mud and associated solids will be confined to the pit and not squeezed out and incorporated in the surface materials. There would be a minimum of three feet of cover (overburden) on the pit. When work is complete, the pit area would support the weight of heavy equipment without sinking.

Approximately 1.75 miles of new access roads would be constructed to access the 12 pads (all new roads and pads were previously approved in the 2002 WWGAP EA) with an average width of 30 feet. New pipelines and flow lines would be buried within existing or new access roads. At existing well pads where two or more new wells are proposed, additional 3- to 4-inch diameter flow lines would most likely be added beneath access roads. The lines would be buried to a minimum four feet from ground surface to top of pipe.

Williams anticipates that approximately 1.5 to 2.5 acres of surface terrain would be disturbed to create a new well pad. The exact amount of surface disturbance would vary on an individual basis depending on topography and number of bottom hole locations targeted. Subsequent reclamation would mitigate the disturbed area to approximately 0.5 acre after well development. Well site reclamation would be performed and monitored in accordance with the Standard Surface Use Plan in the Master APD. All cut slopes associated with pad construction would be "step cut" and left rough to provide a seed catchment surface. Cut slopes required for pad construction would not be steeper than 1.5:1.

Existing evaporation ponds would be used for the treatment of produced water. Due to the fact that Williams is currently recycling the majority of their produced water, the ponds have an indefinite life and should not have to be enlarged for this GAP.

#### Production (Operation and Maintenance)

A typical Williams's well location would consist of a wellhead, dehydration unit, 200-barrel capacity aboveground stock tank, and an 80-barrel capacity partially buried water tank. Multi-well locations would share production equipment whenever feasible to minimize surface occupancy/disturbance. Production equipment would be painted to match the surrounding terrain and minimize visual impact. The equipment would be fenced within a 45-foot by 25-foot area to prevent contact with wildlife/livestock. Flow lines would be buried beneath access roads whenever possible. Telemetry equipment would be utilized to remotely monitor well conditions, to minimize traffic to and from the well locations. Automated tank gauging would be employed to minimize the risk of spills. Centralized compression would take place, thus avoiding the need for onsite well compressors and minimizing the area impacted by compressor noise.

Produced water could be confined to the reserve pit for a period of 90 days after initial production. A permanent steel tank would be installed in the ground next to the production facilities to temporarily contain produced water for the duration of operation of the well. Produced water at well pads would be collected by tanker trucks and disposed of at one of two State-approved central (existing) evaporation ponds owned by Williams. All cuttings, drilling fluids, and chemicals would be contained in the reserve pit.

After completion activities, Williams would reduce the size of the well pad to the minimum surface area needed for production facilities, while providing for reshaping and stabilization of cut and fill slopes. The cut and fill slopes would be reshaped to a maximum 3:1 slope, where possible. All disturbed areas not necessary for drilling and producing operations would undergo the following reclamation standards after completing dirt work and operations.

Some locations will require special reclamation practices such as mulching, the method and time of planting, the use of different plant species, soil analysis to determine the need for fertilizer, fertilizing, seed-bed preparation, contour furrowing, watering, terracing, water barring, and the replacement of topsoil. Areas being reclaimed would be fenced to exclude livestock for the first two growing seasons or until the seeded species have established. Noxious weeds that may be introduced due to soil disturbance and reclamation would be treated by methods to be approved by the BLM.

The access roads would be inspected and maintained on a biannual basis, at a minimum, to include such items as:

- Road surface grading;
- Relief ditch, culvert cleaning and cattle guard cleaning;
- Erosion control measures for cut and fill slopes and all other disturbed areas;
- Road closures in periods of excessive soil moisture to prevent rutting caused by vehicular traffic; and
- Road and slope stabilization measures as required until final abandonment and rehabilitation.

Periodically, a workover or recompletion on a well may be required to ensure that efficient production is maintained. Workovers can include repairs to the well bore equipment (casing, tubing, rods, or pump), the well head, or the production facilities. These repairs would usually be completed in several days per well, during daylight hours. The frequency for this type of work cannot be accurately projected because workovers vary well by well; however, an average work time may be one workover per well per year for a period of seven days. In the case of multi-well pads, space for equipment would be usually limited to the "in use" (i.e., disturbed) area of the surface location, although it is possible that interim reclamation would be affected. In the case of a recompletion, where casings are worked on or valves and fittings would be replaced to stimulate production, a reserve pit may have to be constructed. This could have an effect on interim reclamation efforts.

In the analysis of the in the Wheeler to Webster Geographic Area Plan, July 2002, the PA 33-27 and the PA 41-29 locations were not approved because the locations failed to conform with the lease stipulations regarding Class II visual resource management. This plan (Wheeler to

Webster Geographic Area Plan 2005) includes wells planned for the above-described locations. These wells on these locations cannot be permitted until Williams demonstrates that these locations can meet the requirements of the lease stipulations. As a result, the following wells will not be considered in this Environmental Assessment:

Wheeler to Webster GAP (2005) location; PA 441-29, PA -541-29.

Wheeler to Webster GAP (2005) locations: PA 432-27, PA 433-27, PA 533-27, PA 633-27.

No Action Alternative:

The proposed action affects federal subsurface minerals encumbered with federal oil and gas leases granting the lessee the right to explore and develop the oil and gas leases. The No Action Alternative constitutes a denial of the proposed action. Absent a nondiscretionary statutory prohibition against drill, the BLM cannot deny the right to drill and develop the leasehold. Only congress can completely prohibit development activities. Overall, the No Action Alternative has been considered but eliminated from analysis due to existing lease rights involved.

NEED FOR THE ACTION: The purpose and need is to authorize the Application for Permit to Drill (APD) to satisfy federal lease obligations that will in turn provide natural gas for commercial marketing to the public.

PLAN CONFORMANCE REVIEW: The Proposed Action is subject to and has been reviewed for conformance with the following plan (43 CFR 1610.5, BLM 1617.3):

Name of Plan: Glenwood Springs Resource Management Plan.

Date Approved: Amended in November 1991 - Oil and Gas Leasing and Development - Final Supplemental Environmental Impact Statement; amended Nov. 1996 - Colorado Standards and Guidelines; amended in August 1997 - Castle Peak Travel Management Plan; amended in March 1999 - Oil and Gas Leasing & Development Final Supplemental Environmental Impact Statement (FSEIS); amended in November 1999 - Red Hill Plan Amendment; and amended in September 2002 – Fire Management Plan for Wildland Fire Management and Prescriptive Vegetation Treatment Guidance.

Decision Number/Page: The proposed action is located on leases in area designated Open for oil and gas leasing in 1984 in the Glenwood Springs Resource Management Plan (page 14 and map 4).

Decision Language: The FSEIS described the environmental effects, including the cumulative effects, of oil and gas development, but did not authorize the construction of any individual well locations. This EA is more site-specific than the FSEIS and includes the results of the on-the-ground inventories for cultural resources and special status plant and animal species, if appropriate. This EA tiers to both the DSEIS and FSEIS and the information in the FSEIS is incorporated by reference. The EA will focus on specific issues and will not deal with the larger regional issues addressed in the FSEIS. The proposed action, as modified to

drop the locations that do not conform to the lease stipulations, has been reviewed for and is in compliance with the FSEIS (43 CFR 1610.5, BLM 1617.3) - Page or Decision Number: Pages 1-5, Record of Decision dated March 24, 1999.

Standards for Public Land Health: In January 1997, Colorado Bureau of Land Management (BLM) approved the Standards for Public Land Health. The Glenwood Springs Field Office is in the ongoing process of completing Land Health Assessments on a landscape basis. The fieldwork for the Land Health Assessment for the landscape addressed in this EA was completed in 2004. The Final Land Health Assessment Report and Determination Document are currently in preparation. The Draft Report indicates that this portion of the landscape is not meeting Standard 3 for wildlife primarily due to habitat fragmentation and the lower reach of Cottonwood Gulch was not meeting Standard 2 for riparian systems due to road encroachment and blown out culverts. Based on the findings of the assessment, the authorized officer may take appropriate action to achieve conformance with the standards or implement further mitigating measures on future actions to maintain or prevent a further decline in land health.

The five standards cover upland soils, riparian systems, plant and animal communities, threatened and endangered species, and water quality. Standards describe conditions needed to sustain public land health and relate to all uses of the public lands. Because a standard exists for these five categories, the impact analysis must address whether the proposed action or any alternatives being analyzed would result in impacts that would maintain, improve, or deteriorate land health conditions for that specific parameter. These analyses are located in specific elements listed below:

#### AFFECTED ENVIRONMENT / ENVIRONMENTAL CONSEQUENCES / MITIGATION MEASURES:

##### CRITICAL ELEMENTS

##### AIR QUALITY

The following discussion provides an assessment of the air quality impacts associated with the addition of 213 gas wells proposed by Williams Production RMT Company, a division of Williams Energy, to be added to the Wheeler to Webster Geographic Area Proposal (GAP) since the Environmental Assessment for the Wheeler to Webster Proposed Action Alternative for Gas Wells was prepared in July 2002. The baseline analysis of air quality impacts for this project domain as well as the larger surrounding area is provided in the Air Quality Assessment Report (AQAR) document for the Vernal Resource Management Area, Utah and Glenwood Springs Resource Management Area, Colorado (Project 014801.0038), August 2004, as well as the Draft Roan Plateau Resource Management Plan Amendment/Draft EIS, November 2004, both of which are available for review at the Glenwood Springs Field Office.

The addition of 213 wells proposed by this action is included in the detailed air quality analysis that was presented in the Draft Roan Plateau Resource Management Plan Amendment/Draft EIS, November 2004. This analysis, as presented in Alternative 1 of this document, analyzed the air quality impacts associated with the installation of 855 wells on 254 well pads during a 20-year

period of analysis. The currently proposed action is a small percentage of that proposed well drilling and operating assumption.

**Affected Environment:**

Based on the Colorado state air quality standards for the protection of human health, the existing regional air quality is acceptable. Garfield County is designated as an attainment area for National Ambient Air Quality Standards (NAAQS) criteria pollutants in the ambient air. Monitoring of air quality in the area indicates that the existing air quality is well within the NAAQS. Table 3-1 provides a summary of representative air quality data for the GAP.

Table 3-1  
Air Pollutant Background, Ambient Air Quality Standards  
And PSD<sup>a</sup> Increment Concentration (in  $\mu\text{g}/\text{m}^3$ )  
By Applicable Average Time

Pollutant	Average Time	Measured Background <sup>b</sup>	Colorado and National Ambient Air Quality Standards	PSD Class I Increment	PSD Class II Increment
Carbon Monoxide (CO)	1-Hour	11,430	40,000	N/A	N/A
	8-Hour	6,667	10,000	N/A	N/A
Nitrogen Dioxide (NO <sub>2</sub> )	Annual	35 <sup>c</sup>	100	2.5	25
Ozone (O <sub>3</sub> )		172 <sup>c</sup>	235	N/A	N/A
Particulate Matter (PM <sub>10</sub> )	24-Hour	72	150	8	30
	Annual	32	50	4	17
Sulfur Dioxide (SO <sub>2</sub> )	3-Hour (Federal)	31	1,300	25	512
	3-Hour (Colorado)	31	695	N/A	N/A
	24-Hour	16	365	5	91
	Annual	5	80	2	20

<sup>a</sup> Prevention of Significant Deterioration

<sup>b</sup> Short-term background concentrations are second-maximum measured values.

<sup>c</sup> NO<sub>2</sub> and O<sub>3</sub> background data are not available for the proposed project area.

N/A = Not applicable

**Environmental Consequences:**

The Proposed Action emission sources include those required for well development, well production, and gas processing. Increased vehicle traffic and drilling activity during the development phase of the Proposed Action, followed by continuous well site and central dehydrator emissions will also occur. These sources will produce emissions of oxides of nitrogen (NO<sub>x</sub>), carbon monoxide (CO), particulate matter less than 10 and 2.5 microns in effective diameter (PM<sub>10</sub>, PM<sub>2.5</sub>) and volatile organic compounds (VOCs). Estimates of emissions indicate

that benzene, toluene, ethylbenzene and xylenes (BTEX) compounds and n-hexane would be the primary hazardous air pollutants (HAP) emitted from the Proposed Action sources.

Total estimated emissions for the GAP Proposed Action were evaluated based on William's original proposal to drill up to 160 wells from 21 existing and 38 proposed well pads. These wells and associated activity were included in the evaluation as part of the Reasonable Foreseeable Development scenario for the GAP. All development related emission calculations, which include well pad and access road construction, well drilling, and well completion, are below the maximum development rate wells as assumed by the initial GAP EA, the AQAR document for the Vernal Resource Management Area, Utah; Glenwood Springs Resource Management Area, Colorado, as well as the Draft Roan Plateau Resource Management Plan Amendment/Draft EIS. Under the current proposed action, which includes drilling and production of an additional 213 wells, total project emissions would be only an incremental increase over the original Wheeler to Webster GAP and not a significant increase relative to the emissions assumed by the Draft Roan Plateau Resource Management Plan Amendment/Draft EIS.

The individual sources of Proposed Action related emissions are discussed below:

#### Well Development Emissions

Well development activities will produce emissions in three distinct phases: well pad and access road construction, well drilling, and well completion. During well development, vehicle and fugitive dust emissions would increase within the GAP. Vehicle emissions would result from work crews commuting to and from the work site and from the transportation and operation of construction equipment. Vehicle tailpipes would emit small quantities of NO<sub>x</sub> and CO. Fugitive dust concentrations would increase with additional vehicle traffic on unpaved roads and from wind erosion in areas of soil disturbance. Drill rig operations would result mainly in an increase of NO<sub>x</sub> and CO emissions. Calculations of emission rates used applicable EPA emission factors and anticipated levels of operational activities, such as estimated vehicle trips, load factors, and hours of operation.

#### Project Operation Emissions

Once the construction phase is complete, operation of the GAP wells would primarily produce NO<sub>x</sub>, CO, PM<sub>10</sub>, VOC, and HAP emissions from the following sources:

- separator heaters and condensate storage tanks located at well pads;
- glycol dehydrator reboilers and still vents at existing central compressor stations;
- vehicle tailpipe sources; and
- road dust from vehicles.

The Proposed Action is not expected to produce any substantial adverse impacts to air quality. Localized increases in NO<sub>x</sub>, CO, and PM<sub>10</sub> concentrations would occur, but maximum concentrations would be below applicable federal and state standards. Hazardous air pollutant health risks and incremental increases in cancer risk would be below applicable significance levels. Potential impacts to ambient air quality, visibility, acid neutralization capacity, and total nitrogen deposition would be below the levels of acceptable change.

Given the relative magnitude of the Proposed Action emissions, the Proposed Action would not influence cumulative Air Quality Related Values impacts as analyzed in the Draft Roan Plateau Resource Management Plan Amendment/Draft EIS.

**Mitigation:**

Mitigation of air quality impacts would be accomplished through the permitting of all regulated air pollution sources through the Colorado Department of Public Health and Environment, Air Pollution Control Division. Construction and operating permits, if applicable (e.g., large glycol dehydration units), may require the use of emissions control technology to reduce air pollution emissions and impacts to air quality. For smaller, minor sources of air pollution (e.g., small dehydrators, condensate tanks), impacts are generally insignificant and mitigation is not warranted.

Williams has committed to minimizing hazardous air pollutants (HAP) associated with the operation of glycol dehydration by installing condensers on each unit. The use of condensers as applied by Williams results in a reduction of benzene emissions by over 60% of the current uncontrolled levels (McVehil-Monnett Associates, 2002). Benzene is a commonly occurring HAP associated with natural gas dehydration. Additionally, Williams is committed to continuing the use of condensers with all future dehydrator installations.

The operator is responsible for applying dust abatement measures as needed or directed by the Authorized Officer to reduce the emissions of fugitive dust from access roads. The level and type of treatment (watering or application of various dust agents, surfactants and road surfacing material) may be changed in frequency, intensity, etc., and must be approved by the Authorized Officer. Dust control is needed to prevent heavy plumes of dust from road use that create safety problems and disperses heavy amounts of particulate matter on adjacent vegetation. If additional mitigation is required in addition to that already identified in the Wheeler to Webster GAP EA 2002, the operator will coordinate those additions with the Authorized Officer.

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**Additional reference:**

Air Dispersion Modeling Analysis of Existing Conditions and 10-Acre Application, Benzene Emissions in the Piceance Basin, prepared for Williams Engineering, Denver, CO, McVehil-AIR QUALITY

**AREAS OF CRITICAL ENVIRONMENTAL CONCERN**

**Affected Environment:**

There are no designated Areas of Critical Environmental Concern (ACEC) within the proposed project area. However, the proposed action is within an area currently being analyzed as an Area of Critical Environmental Concern under the Roan Plateau RMP.

One identified relevant and important value that meets ACEC criteria for the Anvil Points ACEC was the geologic values of the Anvil Points Claystone Cave complex. The cave system is regionally significant and is reported to be one of the longest known caves of this type in the

region. Moreover, the large arch entrance formed out of mudstone and sandstone in the Wasatch formation is highly unusual. The composition of the arch and cave complex makes them extremely fragile and vulnerable to collapse. The Anvil Points cave complex and associated values was identified during the Glenwood Springs Resource Area, Oil and Gas Leasing and Development Environmental Impact Statement, 1999 and subsequently is being managed under a No Surface Occupancy (NSO) Stipulation #19 Anvil Points Cave Area. This stipulation states; “For the protections of scientific and wildlife values provided by these caves and to avoid the difficulties inherent in drilling such locations, no surface occupancy will be permitted in the area encompassing the cave openings, subsurface features and the watersheds immediately above the caves. Exceptions: No exceptions are identified.”

#### Environmental Consequences/Mitigation:

The proposed action has no surface locations within the NSO 19 area but 9 subsurface well locations are proposed. The fragile nature and composition of cave system makes the cave itself and its associated values subject to adverse impacts and possible collapse.

The proponent has provided a detailed plan of development that demonstrates how the proposed action will meet stipulation NSO 19 and protect the surface, subsurface features (geologic), scientific, wildlife and historic values.

Monitoring of the Anvil Points Cave Complex surface and subsurface features should be done prior to drilling operations, between well bores, and after completion by a qualified caver or geologist.

#### Mitigation:

Human Health and Safety measures, such as a warning sign giving “Notice to cavers, drilling activities are taking place in the immediate vicinity enter at your own risk” should be installed and maintained during drilling activities at North and South caves entrances until completion.

## CULTURAL RESOURCES

#### Affected Environment:

Refer to the Williams Production Wheeler to Webster Geographic Area Proposal for Gas Wells (WW-GAP), BLM, July, 2002, for the Affected Environment for Cultural Resources in Section 3.2 beginning on page 3-3. Additional cultural resource information on the Anvil Points Oil Shale facility (GSFO #'s 15504-1 and 15505-1) has come to light since the WW-GAP was signed. These reports document four of the seven components that comprise site 5GF886. Each of the seven components (Localities) are being examined as part of an engineering evaluation/cost analysis (EE/CA) to evaluate remedial alternatives for the shale pile and associated impoundments. As part of this project the National Register of Historic Places (NRHP) eligibility is being determined in consultation with the Colorado State Historic Preservation Office (SHPO) for each locality. Both the townsite (Locality 2) and the water treatment plant (Locality 6) have been determined to be potentially eligible and contributing elements of the eligible property (Anvil Points Facility – 5GF886). The processing plant (Locality 1) and the dump (Locality 3) have been determined to be not eligible for listing on the NRHP and are considered non-contributing elements of the site. Three other localities (mine, water plant for the mine, and road) remain to be examined, recorded, and evaluated.

Anvil Points Claystone Cave complex. The cave system is regionally significant, is reported to be one of the longest known caves of this type in the region, containing historic inscriptions. The large arch entrance formed out of mudstone and stone in the Wasatch formation is highly unusual and makes them extremely fragile and vulnerable to collapse. The inscriptions have yet to be fully recorded or evaluated.

Additional Class III inventories within the GAP area have been conducted, but do not involve the wells listed in this action. No new historic properties, eligible for listing on the NRHP have been identified as a result of these surveys.

#### Environmental Consequences:

Refer to the *Environmental Assessment Williams Production Wheeler to Webster Geographic Area Proposal for Gas Wells*, BLM, July, 2002, Section 4.2, beginning on page 4-5 for a discussion of Environmental Consequences and Mitigation Measures. In addition, refer to the following NEPA documents: EA-078-5-31, EA-078-00-67, EA-078-00-44, EA-078-06-04, EA-078-04-98, and EA-CO140-2001-47. Additionally, the 1999 FSEIS should be referenced to ensure their compliance with that document.

Proposed wells RWF 343-18, RWF 443-18, RWF 543-18, RWF 42-18, RMV 168-17, RWF 312-17, RWF 313-17, RWF 413-17, and RWF 513-17 will be drilled from existing pads within Locality 1. This locality has been determined to be not eligible for listing on the NRHP and is a non-contributing element of the Anvil Points Facility (5GF886).

Proposed wells RWF 411-18, RWF 421-18, and RWF 521-18 will be drilled from an existing pad along the northern edge of Locality 3. This locality has been determined to be not eligible for listing on the NRHP and is a non-contributing element of the Anvil Points Facility (5GF886).

The access road into existing pad RMV 63-19 was supposed to have been monitored during construction. No record of this monitor exists at the GSFO, SHPO's offices or with the archaeological contractor, Grand River Institute. It appears that the monitor was not done. Construction of this access road may have adversely impacted a potentially eligible archaeological site (5GF2276).

The fragile nature and composition of Anvil Points cave system makes the cave itself and its associated values subject to adverse impacts and possible collapse. The proposed action has no surface locations within the NSO 19 area but nine subsurface well locations are proposed. The proponent has provided a detailed plan of development that demonstrates how the proposed action will meet stipulation NSO 19 and protect the surface, subsurface features (geologic), scientific, wildlife and historic values.

The proposed action allows for no new surface disturbance from that already analyzed in the previous EA's. Therefore, in general, there should be no beneficial or detrimental effects to cultural resources as long as mitigation identified in this and previous EA's are followed. In accordance with the National and Colorado BLM/SHPO Protocols (1997 and 1998) and the

National Historic Preservation Act (16 U.S.C. 470) Section 106, a determination of “No Historic Properties Affected” has been made for this action.

Long-term cumulative impacts from increased access and personnel could result in a range of impacts to unknown cultural resources from illegal collection to vandalism. The Inadvertent Discovery clause needs to be emphasized to William’s and all of their subcontractors to protect and preserve cultural resources.

#### Mitigation:

Specific mitigation identified in previous EA’s need to be reiterated for this proposed GAP.

- Archaeological monitoring is required for any new construction or excavation adjacent to the RMV 63-19 access road beyond the existing road footprint.
- Anvil Point Townsite well RWF 133-19 and access road through the townsite. All surface disturbing activity should be restricted to the existing well pad footprint as identified by metal pipe cemented into the ground around the periphery of the original well pad footprint. Additionally, all vehicular traffic should be restricted to the existing well pad footprint and existing access road. No off road vehicular travel should be allowed and no vehicular parking is allowed on both sides of the road within the NE ¼ of Section 19, Township 6 South, and Range 94 West.
- Record and evaluate for the NRHP the historic inscriptions within the Anvil Point Cave.
- Inadvertent Discovery: The National Historic Preservation Act (NHPA) requires that if newly discovered cultural resources are identified during project implementation, work in that area must stop and the agency Authorized Officer notified immediately (36 CFR 800.13). The Native American Graves Protection and Repatriation Act (NAGPRA), requires that if inadvertent discovery of Native American Remains or Objects occurs, activity must cease in the area of discovery, a reasonable effort made to protect the item(s) discovered, and immediate notice made to the BLM Authorized Officer, as well as the appropriate Native American group(s) (IV.C.2). Notice may be followed by a 30-day delay (NAGPRA Section 3(d)). Further actions also require compliance under the provisions of NHPA and the Archaeological Resource Protection Act.

#### ENVIRONMENTAL JUSTICE

Affected Environment: Review of 2001 data from US Census Bureau indicates the median annual income of Garfield County averages \$43,560 and is neither an impoverished nor a wealthy county. Median annual income of Eagle County averages \$51,578 and is not impoverished but is considered a wealthy county. U.S. Census Bureau data from July, 2002 shows the minority population of Garfield and Eagle County comprises less than 3 % of the total population<sup>1</sup>.

Garfield County	Eagle County
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<sup>1</sup> Table CO-EST2002-ASRO-02-08-County Population Estimates by Race Alone and Hispanic or Latino Origin: July 1, 2002

Source: Population Division, U.S. Census Bureau

Release Date: September 18, 2003

Median Household Income		Median Household Income	
Estimate	90% Confidence Interval	Estimate	90% Confidence Interval
\$43,560	\$40,491 to \$46,613	\$51,578	\$47,958 to \$55,177

Environmental Consequences/Mitigation: The proposed action and alternatives are not expected to create a disproportionately high and adverse human health impact or environmental effect on minority or low-income populations within the area.

#### FARMLANDS, PRIME AND UNIQUE

Affected Environment: The proposed action does not involve any prime or unique farmlands.

#### FLOODPLAINS

Affected Environment:

Refer to the *Williams Production Wheeler to Webster Geographic Area Proposal for Gas Wells*, BLM, July, 2002, for the Affected Environment for Floodplains in Section 3.9.2, pg. 3-19.

Environmental Consequences/Mitigation:

Refer to the *Williams Production Wheeler to Webster Geographic Area Proposal for Gas Wells*, BLM, July, 2002, for the Environmental consequences for Floodplains in Section 4.9.1.2, pg. 4-18. Water quality and riparian and wetland mitigation covered in this document are requisite mitigation for floodplains and would likely ameliorate any potential impacts to floodplains downstream from drainages in the proposed action area.

#### INVASIVE, NON-NATIVE SPECIES

Affected Environment:

Refer to the *Environmental Assessment Williams Production Wheeler to Webster Geographic Area Proposal for Gas Wells*, BLM, July, 2002, Section 3.16, beginning on page 3-25 for a description of the Affected Environment for Invasive, Non-native Species.

Environmental Consequences:

Refer to the *Environmental Assessment Williams Production Wheeler to Webster Geographic Area Proposal for Gas Wells*, BLM, July, 2002, Section 4.16, beginning on page 4-26 for a discussion of Environmental Consequences and Mitigation Measures. In summary, the proposed action would likely increase both the number and extent of infestations of noxious weeds and other non-native plants in the GAP area.

Mitigation:

Mitigation Measures applied as part of the above-mentioned EA include interim reclamation of the surface area of the drill pad not needed for facilities or operations and all unused portions of the road according to the standards of the GSRA Reclamation Policy (Appendix I of the Draft SEIS). No non-native species will be used in the reclamation seed mixes other than sainfoin (a legume). Sainfoin will be approved for use in the salt desert shrub community since

there are currently no suitable native legumes adapted to this site that will meet management objectives.

The following Seed Mixes approved for the GAP will be utilized for reclamation of all pads in the proposed action:

Pinyon-Juniper/Sagebrush Mix		
<u>Species of Seed</u>	<u>Variety</u>	<u>Application Rate (lbs/acre)</u>
Northern sweetvetch		1.0
Four-wing saltbush	Rincon	2.0
Shadscale		2.0
Wyoming big sagebrush		0.5
Western wheatgrass	Arriba	2.5
Bluebunch wheatgrass	P7	2.0
Salina wildrye		1.5
Galleta grass	Viva	1.0
Alkali sacaton	Salado	0.5
<u>Sandberg bluegrass</u>		<u>1.0</u>
Total:		14.0 lbs. PLS/acre Total

Salt Desert Shrub Mix		
<u>Species of Seed</u>	<u>Variety</u>	<u>Application Rate (lbs/acre)</u>
Scarlet globemallow		1.0
Four-wing saltbush	Rincon	2.0
Shadscale		2.0
Gardner saltbush		1.0
Wyoming big sagebrush		0.5
Western wheatgrass	Arriba	3.0
Salina wild rye		1.0
Galleta	Viva	1.0
Alkali sacaton	Salado	0.5
<u>Sandberg bluegrass</u>		<u>1.0</u>
Total:		13.0 lbs. PLS/acre Total

The above rate of application is listed in pounds of pure live seed (PLS)/acre. The project proponent will adhere to the specified seed mix and will continue with reclamation activities, including reseeding if necessary, until BLM's interim reclamation objectives are achieved. The seed will be certified and there will be no primary or secondary noxious weeds in the seed mixture. The operator shall notify the Authorized Officer 24 hours prior to seeding and shall provide seed tags and evidence of certification of the seed mix to the Authorized Officer within 30 days of completion of the seed application.

Upon completion of backfilling, leveling, ripping to a minimum 18 inch depth on 2 foot centers, and recontouring, the stockpiled topsoil will be evenly spread over the reclaimed areas(s). Prior to reseeding, all disturbed surfaces will be scarified and left with a rough surface. No depressions will be left that will trap water and form ponds.

The prepared seedbed will be seeded within 24 hours after completing dirt work unless a change is requested by the operator and approved by the Authorized Officer. Prepare the seedbed by contour cultivating 4-6 inches deep. Drill seed ¼ to ½ inch deep following the contour. In areas that cannot be drilled, broadcast seed at 1½ times the application rate and cover ¼ to ½ deep with a harrow or drag bar. All seeding will be conducted between September 1<sup>st</sup> and May 1<sup>st</sup>. If the seeding is unsuccessful, operator will be required to make subsequent seedings until the reclamation objectives identified in Appendix I. Surface Reclamation of the 6/98 GSFO's Draft Supplemental EIS for Oil & Gas Leasing Development are met.

A standard Condition of Approval will be attached requiring the project proponent to promptly treat and control any invading noxious weeds. A weed detection and control program would begin the first growing season after surface disturbance occurs and continue through the life of the wells. A Pesticide Use Proposal must be approved by BLM prior to commencing any herbicide spraying.

In addition, all areas being reclaimed will be fenced to exclude livestock until seeded species are established and well-rooted, and 55% of seeded species are reproducing. (This will require a minimum of two growing seasons but may be longer depending on climatic conditions.)

## MIGRATORY BIRDS

### Affected Environment:

The Wheeler to Webster GAP area is comprised of a variety of vegetative habitats including salt desert scrub, sagebrush, pinyon-juniper woodlands, limited riparian, oakbrush/mixed mountain shrub, and greasewood flats. Given the diversity of vegetation, the area provides habitat for numerous migratory bird species. The following species listed on the U.S. Fish & Wildlife Service's Birds of Conservation Concern list are or may be present: sage sparrow, Brewer's sparrow, Virginia's warbler, loggerhead shrike, peregrine falcon, Lewis's woodpecker, gray vireo, pinyon jay, and Black-throated gray warbler.

### Environmental Consequences/Mitigation:

Migratory birds were not specifically addressed in the original Environmental Assessment - Williams Production Wheeler to Webster Geographic Area Proposal for Gas Wells, May 2002. As such, impacts will be discussed with regard to the original proposed action as well as the proposed action identified in this EA.

The total amount of direct vegetative disturbance from all existing and all approved well pads, roads, and pipelines associated with natural gas development within the GAP boundary is approximately 715 acres. This acreage figure is spread out across the GAP and has resulted in habitat fragmentation that has substantially reduced habitat patch size and connectivity. When coupled with increased vehicular and human use associated with construction and then production activities, the amount of habitat "effectively lost" is increased to approximately 7,724-acres based on a 1/8 mile displacement factor. Sensitive bird species are likely to shy away from areas of heavy human activity. This habitat avoidance effect is compounded when activity occurs during the spring nesting season. It is likely that many species will not nest, or abandoned nests as construction activities commence.

Losses of pinyon-juniper woodlands and sagebrush eliminate important nesting, foraging, roosting, breeding, and perching habitats. Although interim reclamation of portions of well pads and pipelines helps to reduce vegetation loss, replacement grasses and forbs do not provide the same habitat characteristics as those shrubs and trees present prior to disturbance. It is likely that individual nests have been or will be destroyed. Although individual birds are likely being negatively impacted, it is difficult to determine if whole species or populations are being severely impacted. No mitigation specific to migratory birds is identified.

Cumulatively, impacts are ever increasing as physical and effective habitat loss continues due to increasing natural gas development activities.

## NATIVE AMERICAN RELIGIOUS CONCERNS

### Affected Environment:

Refer to the *Environmental Assessment Williams Production Wheeler to Webster Geographic Area Proposal for Gas Wells*, BLM, July, 2002, Section 4.3, on page 4-7. At present, no Native American concerns are known by the GSFO within the GAP and none have been identified during the inventories. The Ute Tribes currently claim the area as part of their ancestral homeland. If new data is disclosed, new terms and conditions may have to be negotiated to accommodate their concerns during implementation of the permit.

### Environmental Consequences:

Refer to the *Environmental Assessment Williams Production Wheeler to Webster Geographic Area Proposal for Gas Wells*, BLM, July, 2002, Section 4.2, beginning on page 4-5 for a discussion of Environmental Consequences and Mitigation Measures. In addition, refer to the following NEPA documents: EA-078-5-31, EA-078-00-67, EA-078-00-44, EA-078-06-04, EA-078-04-98, EA-CO140-2001-47, and the 1999 FSEIS. Indirect impacts from increased access and personnel could result in a range of impacts to unknown cultural resources from illegal collection to vandalism. The importance of the Inadvertent Discovery Stipulation needs to be stressed to William's and their subcontractors. See Cultural Section.

## THREATENED, ENDANGERED, AND SENSITIVE SPECIES (includes an analysis on Standard 4).

### Affected Environment:

Refer to the Environmental Assessment Williams Production Wheeler to Webster Geographic Area Proposal for Gas Wells, July 2002, Section 3.7, starting on page 3-10 for a description of affected environment. In addition, refer to the following NEPA documents: EA-078-5-31, EA-078-00-67, EA-078-00-44, EA-078-06-04, EA-078-04-98, and EA-CO140-2001-47.

### Environmental Consequences/Mitigation:

Refer to the Environmental Assessment Williams Production Wheeler to Webster Geographic Area Proposal for Gas Wells, July 2002, Section 4.7, starting on page 4-9 for discussion of environmental consequences and mitigation measures. In addition, refer to the following NEPA

documents: EA-078-5-31, EA-078-00-67, EA-078-00-44, EA-078-06-04, EA-078-04-98, and EA-CO140-2001-47.

The proposed action will allow for no new surface disturbance from that already analyzed. However, specific to this proposed action, the drilling of 9 directional wells is planned directly below the Anvil Points Claystone Cave. As such, Townsend's big-eared bats (BLM Sensitive Species) are addressed below in greater detail.

#### *Townsend's big-eared bats*

The proposed action calls for the drilling of 9 directional well bores directly below the Anvil Points Claystone Cave complex in Township 6 South, Range 94 West, Section 17 from 3 surface locations (RMV 60-17, RMV 89-17, and MV 123-17). It is possible that if directional drilling disrupts the integrity of the cave in any way, the local Townsend's big-eared bat population could be jeopardized. Cave dwelling species, such as the Townsend's big-eared bat generally require stable roost environments with constant temperatures, humidity, moisture, and air flow patterns to thrive. These characteristics are important for daily roosting activities and for maternity roost and hibernacula sites. Any action that would change or impair the physical characteristics or adversely alter cave habitat characteristics could negatively impact the resident bat population's ability to reproduce and sustain.

The proponent (Williams) has provided a detailed plan of development that demonstrates how the proposed action will meet stipulation NSO 19 and protect the surface, subsurface features (geologic), scientific, wildlife and historic values.

As a means of monitoring potential impacts to resident bats, pre and post development bat surveys should be completed by a competent wildlife biologist. Monitoring will help to determine any unforeseen impacts to the bat population from subsurface activities, and will consist of mist netting both prior to drilling and completion, and upon completion of drilling and completion activities in order to determine any changes in bat abundance or use of the cave.

#### *DeBeque milkvetch*

The proposed action calls for the drilling of 9 directional wells from the following surface locations: RMV 89-17, RMV 38-17, and RMV 60-17. These well pads are located within potential habitat for the BLM Sensitive plant, DeBeque milkvetch and there are several known occurrences in the vicinity. Prior to construction of the existing pads, botanical surveys were conducted of the area of proposed surface disturbance. No DeBeque milkvetch or other special status plants were found, however, the surveys only covered the immediate area of proposed disturbance and not a 10-acre or larger buffer around the pad, such as is required today. The original pads varied in size from approximately 1.0 acres to 1.9 acres. If the pad size increases beyond the existing disturbance, there is the potential to impact the rare plants.

#### Mitigation:

If the drilling of directional wells off these three pads (RMV 89-17, RMV 38-17, and RMV 60-17) cannot be completed without enlarging the pads, then a new special status plants survey would be required. If DeBeque milkvetch or other special status plants are found, pad expansion would not be allowed or the expansion would be modified to avoid impacts to the plants.

In addition to the above mitigation, all mitigation addressed in all of the referenced NEPA documents that this EA tiers to should be carried forward as appropriate unless subsequently modified or amended in this EA.

Analysis on the Public Land Health Standard for Threatened & Endangered species:

A formal Land Health Assessment was completed in 2004. The final report is not yet finished, but preliminary results show that the watershed is currently meeting the needs for the Special Status Species present in the area. However, due to intensive natural gas development, the watershed's ability to maintain the meeting of Standard 4 is of concern. The area is in a downward trend for some BLM sensitive species.

**WASTES, HAZARDOUS OR SOLID:** All wastes will be managed in accordance with the applicable Oil and Gas regulations and On-Shore Orders.

**WATER QUALITY, SURFACE AND GROUND (includes an analysis on Standard 5)**  
Surface water:

Affected Environment:

Refer to the *Williams Production Wheeler to Webster Geographic Area Proposal for Gas Wells*, BLM, July, 2002, for the Affected Environment for surface water quality in Section 3.9.1, pg. 3-17-19, for the proposed action and "no action" alternative.

Proposed Action:

Environmental Consequences/Mitigation: Refer to the *Williams Production Wheeler to Webster Geographic Area Proposal for Gas Wells*, BLM, July, 2002, for Environmental Consequences for Surface Water in Section 4.9.1.1, pg. 4-16-18 and additional NEPA documents described in the proposed action section of this document. In addition to the above citation, analysis in the soils and riparian and wetlands section of this document provide required mitigation for the Cottonwood Gulch drainage and remaining areas of the proposed action area. Recent proper functioning condition assessments and multiple site visits including a recent site visit on March 16, 2005, indicate that sediment has been displaced into the lower and upper sections of the stream channel of Cottonwood Creek. A combination of drainage problems from adjacent pads and associated road maintenance activities has likely precipitated the sedimentation.

In order to mitigate the effects of these actions and to ensure protection of water resources from increased sedimentation from road activities and pad development described in the proposed action, the following mitigation is recommended.

- All BLM roads in Cottonwood Gulch will be subject to gravelling by December 1, 2005. The type of gravel to be used will include the use of one of the following:
  - 1 ½ inch CDOT (Colorado Department of Transportation) Class 5 gravel wet and rolled in.
  - Locally obtained road materials approved by the Authorized Officer

Graveling of roads should be periodically re-graveled as directed by the authorized officer. Initial gravel application will be a minimum of 4 inches. When rutting within the traveled way becomes greater than 6 inches, additional gravel will be applied.

- All culverts that have currently failed or culverts not aligned in the natural drainage of the channel should be replaced and aligned with the natural channel of the drainage with a gradient that maintains the natural drainage velocity to decrease sedimentation and erosion. Destroyed, damaged or inoperable culverts will be removed from the GAP area and disposed of by Williams Production RMT in an authorized landfill.
- The size of the culvert must be large enough to pass a 10-year flood without development of static head at the entrance. Balance the cumulative roadway grade and culvert size to avoid serious head and velocity damage for a 25-year flood (BLM Manual Section 9113, H-a. Drainage Elements). Culverts should be inspected annually to ensure they are functioning properly and promptly maintained (e.g. remove any debris causing blockage) or replaced when necessary.
- Williams Production RMT will consult with the Army Corps of Engineers (for 404 permits) and from the State of Colorado Water Quality Control Division (for stormwater permits) prior to commencing construction activities related with said permits within the proposed action area. Written documentation to the Authorized Officer is required to indicate that appropriate permits have been obtained or are not required by the permitting agencies.

WETLANDS & RIPARIAN ZONES (includes a analysis on Standard 2).

Affected Environment:

Refer to the Environmental Assessment Williams Production Wheeler to Webster Geographic Area Proposal for Gas Wells, May 2002, Section 3.5, page 3-7 for a description of affected environment. In summary, within the Gap area riparian vegetation exists along Cottonwood Gulch, Hayes Gulch, and an unnamed stream below Anvil Points. As part of a 2004 land health assessment, Proper Functioning Condition (PFC) assessments of riparian areas have been conducted within the GAP area since completion of the above referenced environmental assessment. Hayes Gulch was rated as proper functioning condition and there were no issues identified with oil and gas development. Cottonwood Gulch and all tributaries capable of supporting riparian vegetation were also rated as proper function condition with exception of the lower reach (0.6 mile). Refer to the Cottonwood Gulch Lower Reach map (Appendix C, page 1) for the location. This was rated as functioning at risk with an upward trend. A functional at risk rating means this reach is not meeting Public Land Health Standard for riparian systems. The causal factor was road encroachment that was changing flow patterns, increasing sediment, and caused a head-cut (now beginning to stabilize) in the stream channel. Most of the road use is associated with oil and gas activity. Another site visit of this reach was made by BLM personnel on March 16, 2005 to better determine causes of sediment loading and possible solutions. It was noted that most runoff from the road drains directly into the reach which has caused increased sediment into the stream channel. In areas where the road is in close proximity to the stream channel, road maintenance activities have placed fill in the stream channel which is

another cause of increased sediment. Several side drainages have also been interrupted by the road which causes runoff to travel along the road surface (as opposed to natural drainages) and transports more sediment into the stream channel.

Environmental Consequences/Mitigation:

Proposed Action:

Refer to the Environmental Assessment Williams Production Wheeler to Webster Geographic Area Proposal for Gas Wells, May 2002, Section 4.5, pages 4-8 and 4-9 for discussion of environmental consequences and mitigation measures. In summary, potential effects on wetlands and riparian areas include direct impacts such as loss of wetland and riparian vegetation and alteration of wetland and stream channel morphology. Potential indirect effects include increased downstream sedimentation, decreased water quality, and reduction in habitat capability for wildlife species that use wetland and riparian areas. Effects to wetlands and riparian areas could occur from as a result of construction or re-construction of well pads, roads, pipelines, and other associated facilities. The environmental assessment notes that special design, construction, and implementation measures would ensure that the values and functions of wetlands and riparian zones are protected from indirect impacts associated with the proposed activities. As no new surface disturbance would occur under the proposed action, environmental consequences previously discussed in the environmental assessment referenced above would be the same with the exception noted below.

New information obtained through PFC assessment indicates the lower reach of Cottonwood Gulch has been impacted by road encroachment that resulted in a functioning at risk rating for the riparian area. Although the reach was rated as upward trend and the system appeared to be stabilizing at the time, any flashy runoff event would likely unravel the system again causing a downward trend given the present road condition. Changing flow patterns, increased sediment, and head-cut development in the stream channel would likely occur. Road use and maintenance is primarily associated with oil and gas activity. Upon review of the referenced environmental assessment, special design, construction, and implementation measures could not be found that address the road issue discussed above.

Cumulative impacts in the referenced environmental assessment state that implementation of the GAP would result in no increase in cumulative impacts to wetland and riparian areas based on the application of the NSO, CSU, and other site-specific mitigation measures. New information discussed above indicates that there has been an increase in cumulative impacts specifically on the lower reach of Cottonwood Creek (0.6 mile).

Mitigation:

To reduce sediment, reduce the potential for changing flow patterns and head-cut development, the following mitigation is recommended along the road that is affecting the lower reach of Cottonwood Gulch:

Maintenance and repair along the subject road (refer to map - Wetlands and Riparian Areas Mitigation) should implemented to reduce sediment loading of the stream channel. This

maintenance and repair should be in accordance with engineering specifications approved by the BLM.

In the event these specifications are not developed, the following is recommended:

The subject road should be graveled by December 1, 2005. The type of gravel used will include the use of one of the following:

- 1 ½ inch CDOT (Colorado Department of Transportation) Class 5 gravel wet and rolled in
- Locally obtained road materials approved by the Authorized Officer

Graveling of roads should be periodically re-graveled as directed by the authorized officer. Initial gravel application will be a minimum of 4 inches. When rutting within the traveled way becomes greater than 6 inches additional gravel will be applied.

All culverts that have currently failed or culverts not aligned in the natural drainage of the channel should be replaced and aligned with the natural channel of the drainage with a gradient that maintains the natural drainage velocity to decrease sedimentation and erosion. The size of the culvert must be large enough to pass a 10-year flood without development of static head at the entrance. Balance the cumulative roadway grade and culvert size to avoid serious head and velocity damage for a 25-year flood (BLM Manual Section 9113, H-a. Drainage Elements). Culverts should be inspected annually to ensure they are functioning properly and promptly maintained (e.g. remove any debris causing blockage) or replaced when necessary.

Analysis on the Public Land Health Standard for riparian systems: The proposed action with mitigation would improve riparian land health conditions. Without mitigation, riparian land health conditions are likely to deteriorate.

#### WILD AND SCENIC RIVERS

Affected Environment: There are no un-studied rivers, rivers found to eligible or designated Wild and Scenic Rivers within the proposed project area.

#### WILDERNESS

Affected Environment: There are no designated Wilderness areas, Wilderness Study Areas within the proposed project area.

#### NON-CRITICAL ELEMENTS

The following elements **must** be addressed due to the involvement of Standards for Public Land Health:

#### RANGE MANAGMENT:

**Affected Environment:**

The BLM permits livestock grazing on the Cottonwood Gulch (#08924), Webster Park (18922), and the Wheeler Gulch (#08918) Allotments. The second period of grazing use as indicated in the table below is scheduled on the Webster Park Allotment in an area of the allotment that is outside of the GAP boundary. The Sharrard Park Allotment (#08922) is in the GAP area but has no livestock use allocated on it at this time. The table below summarizes the permitted grazing use on the allotments:

<b>Allotment Name &amp; No.</b>	<b>Permittee</b>	<b>Livestock Kind &amp; No.</b>	<b>Period of use</b>	<b>%PL</b>	<b>AUMs</b>
Cottonwood Gulch 08924	Frank and Sheila Daley	Cattle 180	05/11 – 06/05	86	132
Sharrard Park 08922	Not allotted				
Webster Park (18902)	J Gentry	Cattle 100	04/20-05/25	100	118
		Cattle 5	07/01-10/01	100	15
Wheeler Gulch 08918	Puckett Land and Livestock Company	Cattle 4	04/16-05/31	100	6

**Environmental Consequences:**

The proposed action would have minor negative and positive impacts on livestock grazing. Any new constructing resulting in surface disturbance would initially remove livestock forage. The use of lateral drilling on existing pads would greatly reduce the amount of forage lost to livestock. The amount of forage lost would be very minimal and revegetation of disturbed sites would be expected to replace the lost forage in 3 years. Development and maintenance of oil and gas facilities would increase human activity which would disturb grazing livestock. Much of the herbaceous vegetation on the allotments is cheatgrass which has minimal forage value to cattle. On successfully rehabilitated sites cheatgrass would be replaced with higher quality forage.

**Mitigation:**

It is not anticipated that the level of impacts expected from implementation of the proposed action would require adjustment of the livestock stocking rate. The level of forage utilization will be monitored on impacted allotments and if necessary, adjustments in livestock use will be made to protect land health based on this monitoring.

**SOILS (includes a analysis on Standard 1)**

**Affected Environment:** Refer to the *Williams Production Wheeler to Webster Geographic Area Proposal for Gas Wells*, BLM, July, 2002, for the Affected Environment for soils in Section 3.15, pg. 3-23-25.

**Proposed Action:**

Environmental Consequences/Mitigation: Refer to the *Williams Production Wheeler to Webster Geographic Area Proposal for Gas Wells*, BLM, July, 2002, for Environmental Consequences for soils in Section 4.15.1, pg. 4-24-25. Due to the inherent erosion potential and the associated steep slopes of the affected environment, sediment transport is of concern. Analysis in the water quality, riparian and wetlands, and this soils section of this document provides required mitigation for the Cottonwood Gulch drainage due to accelerated erosion and sedimentation of the lower stretch of Cottonwood Gulch. In remaining areas of the GAP area, soils are prone to erosion by their very nature (see above citation for references). Consequently, in areas exclusive of Cottonwood Gulch, Best Management Practices (BMPs) will be implemented as described below. The mitigation described below should be implemented as conditions of approval. This will provide protection for soils, maintain soil productivity, and minimize soil erosion for reclamation of surface disturbance during and following the implementation of the proposed action. In order to mitigate the effects of accelerated erosion and sedimentation in Cottonwood Gulch, mitigation outlined below is recommended.

- All BLM roads in Cottonwood Gulch will be subject to gravelling by December 1, 2005. The type of gravel to be used will include the use of one of the following:
  - 1 ½ inch CDOT (Colorado Department of Transportation) Class 5 gravel wet and rolled in.
  - Locally obtained road materials approved by the Authorized Officer

Graveling of roads should be periodically re-graveled as directed by the authorized officer. Initial gravel application will be a minimum of 4 inches. When rutting within the traveled way becomes greater than 6 inches additional gravel will be applied.

- All culverts that have currently failed or culverts not aligned in the natural drainage of the channel should be replaced and aligned with the natural channel of the drainage with a gradient that maintains the natural drainage velocity to decrease sedimentation and erosion. Destroyed, damaged or inoperable culverts will be removed from the GAP area and disposed of by Williams Production RMT.
- The size of the culvert must be large enough to pass a 10-year flood without development of static head at the entrance. Balance the cumulative roadway grade and culvert size to avoid serious head and velocity damage for a 25-year flood (BLM Manual Section 9113, H-a. Drainage Elements). Culverts should be inspected annually to ensure they are functioning properly and promptly maintained (e.g. remove any debris causing blockage) or replaced when necessary.
- Associated Best Management Practices (BMPs) with storm water regulations addressed in the water quality section will be required and applied to the proposed action area.

Analysis on the Public Land Health Standard for water quality: The proposed action with associated mitigation would not likely prevent standard 1 from being met. However, if mitigation is not implemented as described, soils in the proposed action areas would not likely meet land health standards for soils.

VEGETATION (includes an analysis on Standard 3).

Affected Environment:

Refer to the *Environmental Assessment Williams Production Wheeler to Webster Geographic Area Proposal for Gas Wells*, BLM, July, 2002, Section 3.18, beginning on page 3-33 for a description of the Affected Environment for Vegetation.

Environmental Consequences/Mitigation:

Refer to the *Environmental Assessment Williams Production Wheeler to Webster Geographic Area Proposal for Gas Wells*, BLM, July, 2002, Section 4.18, beginning on page 4-35 for a discussion of the Environmental Consequences and Mitigation Measures.

All mitigation outlined in the 2002 GAP EA will be applied to surface disturbances in this EA. This includes fencing all areas being reclaimed to exclude livestock until seeded species are established and well-rooted and 55% of seeded species are reproducing. (This will require a minimum of two growing seasons but may be longer depending on climatic conditions.)

Analysis on the Public Land Health Standard for plant and animal communities (partial, see also Wildlife, Aquatic and Wildlife, Terrestrial): The fieldwork for the Land Health Assessment for the landscape addressed in this EA was completed in 2004. The Final Land Health Assessment Report and Determination Document are currently in preparation. The Draft Report indicates that portions of the landscape are not meeting Standard 3 due to poor vegetative conditions and habitat fragmentation. With appropriate and timely reclamation, as well as implementation of the mitigation measures in the GAP and in this EA, the proposed action should not result in a further decline of the condition of the plant communities, and may result in a trend toward meeting the Standard.

WILDLIFE, AQUATIC (includes an analysis on Standard 3).

Affected Environment:

Refer to the Environmental Assessment Williams Production Wheeler to Webster Geographic Area Proposal for Gas Wells, May 2002, Section 3.17.1, starting on page 3-26 for discussion of affected environment. In addition, refer to the following NEPA documents: EA-078-5-31, EA-078-00-67, EA-078-00-44, EA-078-06-04, EA-078-04-98, and EA-CO140-2001-47.

Environmental Consequences/Mitigation:

refer to the Environmental Assessment Williams Production Wheeler to Webster Geographic Area Proposal for Gas Wells, May 2002, Section 4.17.1.1, starting on page 4-27 for discussion of environmental consequences and mitigation measures. In addition, refer to the following NEPA documents: EA-078-5-31, EA-078-00-67, EA-078-00-44, EA-078-06-04, EA-078-04-98, and EA-CO140-2001-47.

In addition to the above citations, analysis in this section of this document provides required mitigation for the Cottonwood Gulch drainage due to accelerated erosion and sedimentation of the lower stretch of Cottonwood Gulch. This sedimentation is being caused by erosion

associated with poor maintenance of natural gas access roads and poor culvert placement and design. As vehicular traffic is increased to accommodate the drilling of an additional 213 wells, this sedimentation is likely to increase. Sedimentation is impacting aquatic insect productivity as gravel and cobble substrates are covered in fine sediments reducing oxygen flow required for aquatic insect production.

**Mitigation:**

In order to mitigate the effects of accelerated erosion and sedimentation in Cottonwood Gulch, mitigation outlined in the riparian and wetlands section is recommended.

In addition to the above mitigation, all mitigation addressed in all of the referenced NEPA documents that this EA tiers to should be carried forward as appropriate unless subsequently modified or amended in this EA.

Analysis on the Public Land Health Standard for plant and animal communities (partial, see also Vegetation and Wildlife, Terrestrial): A formal Land Health Assessment was completed for this area in 2004. The report is not yet finished, but preliminary results show that the lower portion of Cottonwood Gulch are not meeting the needs for aquatic wildlife due to increased sedimentation resulting mainly from poor road maintenance and culvert design associated with natural gas development. The proposed mitigation will help to reduce impacts and move the stream towards meeting Standard 3 for aquatic wildlife.

WILDLIFE, TERRESTRIAL (includes an analysis on Standard 3).

**Affected Environment:**

Refer to the Environmental Assessment Williams Production Wheeler to Webster Geographic Area Proposal for Gas Wells, May 2002, Section 3.17.2, starting on page 3-27 for discussion of affected environment. In addition, refer to the following NEPA documents: EA-078-5-31, EA-078-00-67, EA-078-00-44, EA-078-06-04, EA-078-04-98, and EA-CO140-2001-47.

**Environmental Consequences/Mitigation:**

Refer to the Environmental Assessment Williams Production Wheeler to Webster Geographic Area Proposal for Gas Wells, May 2002, Section 4.17.1.2, starting on page 4-28 for discussion of environmental consequences and mitigation measures. In addition, refer to the following NEPA documents: EA-078-5-31, EA-078-00-67, EA-078-00-44, EA-078-06-04, EA-078-04-98, and EA-CO140-2001-47.

Although the addition of 213 wells within the GAP area will not result in any additional surface disturbance from that previously analyzed, it will result in a substantial increase in vehicular traffic and human activity in the area. However, no new mitigation is proposed. The implementation of the original Wheeler to Webster GAP, May 2002, Wildlife Mitigation Plan will help to partially offset impacts associated with increased activity associated with this proposed action.

**Mitigation:**

All mitigation addressed in all of the referenced NEPA documents that this EA tiers to should be carried forward as appropriate unless subsequently modified or amended in this EA.

Analysis on the Public Land Health Standard for plant and animal communities (partial, see also Vegetation and Wildlife, Aquatic): A formal Land Health Assessment was completed for this area in 2004. The report is not yet finished, but preliminary results show that large portions of watershed are not meeting the needs for terrestrial wildlife due to ever increasing habitat loss, habitat fragmentation, and human activity associated mainly with ever increasing natural gas development. The proposed action will result in increased vehicular traffic and human activity in the area and will further trend the watershed away from meeting Standard 3 for terrestrial wildlife.

**OTHER NON-CRITICAL ELEMENTS:** For the following elements, those brought forward for analysis will be formatted as shown above.

Non-Critical Element Present and Analysis	NA or Not		Applicable or	Applicable &
	Present	Present, No Impact	Brought Forward for	

Travel/Access			X	
Cadastral Survey	X			
Fire/Fuels Management	X			
Forest Management	X			
Geology and Minerals			X	
Hydrology/Water Rights			X	
Law Enforcement	X			
Paleontology			X	
Noise			X	
Realty Authorizations	X			
Recreation		X		
Socio-Economics			X	
Transportation			X	
Visual Resources			X	

**ACCESS AND TRANSPORTATION:**

**Affected Environment/ Environmental Consequences**

Existing road access to the pads are through privately owned lands and public access. Truck traffic will be the heaviest during rig-up, completion activities, and the rig-move to the next location. The proposed drilling activities begin in May, 2005.

Garfield County Landfill. Five proposed locations are on existing pads inside the fenced boundary of the Garfield County Landfill (RMV 58-20, RMV 33-20, RMV 38-17, RMV 89-17, MV 9-17). In consultation with Garfield County, Conditions of Approval requiring special access requirements will be added to APDs within the landfill.

## GEOLOGY AND MINERALS:

### Affected Environment/ Environmental Consequences:

There are identified important geologic values associated with the Anvil Points Claystone Cave complex near Anvil Pts (see appendix D ). The cave system is at least regionally significant, as it is reported to be one of the longest (+1,000') known caves of this type in the region. Also, the Wasatch formation sandstone arch entrance has value for being unusual for the region.

The Williams' geologists have provided documentation to demonstrate how the proposed action would protect the surface and subsurface geologic and resource features. According to their submittal, there are two caves in the Anvil Points Cave complex: the North Anvil Points Claystone Cave and the South Anvil Points Cave Group. The surface entrances to the Anvil Points Caves and the orientation and subsurface features of the cave complex itself are all contained within a geographic area that is designated within NSO 19. The cave survey data indicates that between both of the caves there is a maximum of 180 feet of vertical relief with a general overall orientation of north-northeast. Seismic data that has been acquired in the vicinity of NSO 19 for use in evaluating deep gas reservoirs does not image any shallow features.

They also indicate that there are four surface locations included in the 2005 WW-GAP EA that surround the NSO 19 boundary. These locations would be used to access 18 bottom-hole locations, 8 of which fall under the NSO 19 boundary and 3 of which lie below the cave complex. At the time of the drilling of the wells in question, the wellbore to cave minimum distance would be approximately 1,300 ft during the initial drilling of the surface holes. As these wells are drilled deeper, this distance would increase to the total depth of the wells, +/- 8,000 ft. The approximate distance between the shallowest fracture stimulated sand and the cave floor would be roughly 6,000 ft. The hydraulic fractures are contained by bounding shales and should not have a vertical growth greater than 50 ft. A Denver-based company, Pinnacle Technologies, has conducted surface deformation monitoring and mapping during the drilling and completion/fracture stimulation of natural gas wells. A typical hydraulic fracture treatment at a 7,000 ft depth results in induced surface tilts of only 10 nanoradians (10 parts in a billion).

Additionally, the four surface locations are at lower elevations than the cave entrances and are a minimum of 700 ft away from the actual NSO 19 boundary. All of these surface locations currently have existing wells on the drilling pads and therefore it could be concluded that surface noise/sound waves during the previous drilling and completion activity have not affected the integrity of the caves and should not affect it in the future.

Also, any drilling fluid loss that has occurred in the Rulison field has been at a depth of approximately 2,000 ft in Wasatch sands that are confined by shales. No vertical migration of drilling fluids has been documented and to date there has been no indication that any of these fluid losses can be attributed to subsurface voids and/or cave formations<sup>1</sup>.

Williams recognizes that unforeseen geologic features (e.g., faults, fractures) may exist in the subsurface and that the wells to be drilled around and under the NSO 19 boundary may

encounter these features which may be connected to the cave complex; however, finds this to be highly unlikely.

In addition, it is the professional opinion of the project geologists and engineers that the drilling and completion activity associated with any and all bottom-hole locations that are located within the limits of the NSO 19 boundary will have no significant impact on the structural integrity of the cave complex.

<sup>1/</sup> Additional data cited from [www.penntech.com/Tech update 02](http://www.penntech.com/Tech%20update%2002). “Surface Tilt Fracture Mapping”.

Noise:

Environmental Consequences/Mitigation:

There will be increased levels of noise during the construction, drilling, and completion phases of the proposed action. The noise will be most noticeable along the roads used to haul equipment and at the well site. Drilling activities are subject to noise abatement procedures as defined in the Colorado Oil and Gas Conservation Commission Rules and Regulations (Aesthetic & Noise Control Regulations).

Paleontology:

Environmental Consequences/Mitigation: All new wells will be drilled on existing well locations using existing access roads analyzed in previous environmental analysis. No new surface disturbance is anticipated.

If scientifically important fossils are discovered during construction activities and cannot be avoided, mitigation may be necessary.

All persons associated with operations under this authorization should be informed that any objects or sites of paleontological value, such as vertebrate or scientifically important invertebrate fossils, should not be destroyed, damaged or removed.

VISUAL RESOURCES:

Affected Environment:

Refer to the Environmental Assessment Williams Production Wheeler to Webster Geographic Area Proposal for Gas Wells, BLM, July, 2002, Section 3.21, beginning on page 3-40 for a description of the Affected Environment and Key Observation Points for visual resources. In addition, refer to the following NEPA documents: EA-078-5-31, EA-078-00-67, EA-078-00-44, EA-078-06-04, EA-078-04-98, and EA-CO140-2001-47.

The proposed action includes 49 surface locations within VRM Class II areas, 4 locations within VRM Class III, and 6 locations within VRM Class V.

Environmental Consequences/Mitigation:

Refer to the Environmental Assessment Williams Production Wheeler to Webster Geographic Area Proposal for Gas Wells, BLM, July 2002, Section 4.21, beginning on page 4-40 for a discussion of Environmental Consequences and Mitigation Measures as summarized in Appendix J.

In addition, refer to the following NEPA documents: EA-078-5-31, EA-078-00-67, EA-078-00-44, EA-078-06-04, EA-078-04-98, and EA-CO140-2001-47.

Two surface locations PA 33-27 and PA 41-29 in the proposed action, associated wells and access roads were not approved in the Wheeler to Webster Gap, FONSI dated 7-24-02. These wells were determined not to conform to the attached leased stipulation Controlled Surface Use # 5 for Visual Resource Management Class II. Mitigation has not been submitted by lessee to date to show conformance with the above stipulation.

With the site specific mitigation identified in the Wheeler Webster Gap and mitigation listed below, 47 out of the 49 surface locations within VRM Class II areas will meet long term objectives.

Several surface locations were authorized under older leases and built in VRM Class II areas in the foreground distance zones adjacent to the current land fill site. These locations are; MV 9-17, DOE 1-M-18, RMV 33-20, RMV 40-20, RMV 58-20, RMV 56-21. These leases had no visual mitigation stipulations attached to their leases and subsequently the existing sites do not conform to VRM Class II objectives. However, the sites do not dominate the landscape due to the adjacent land use disturbances; they do meet VRM Class III objectives currently in a reclaimed state. However, new surface disturbances, drilling activities and new facilities on these sites will create more contrast in the foreground distance zone and in the I-70 viewshed and will have short term impacts that exceed even VRM Class III objectives. With the following COA's listed below long term impacts can reduce adverse contrasts and these sites will meet the existing condition.

All 6 locations within VRM Class V area will meet those objectives as this class allows for major modification within the landscape.

#### Mitigation:

Standard mitigation which incorporated BLM's recommended "best practices" was applied to all the surface locations approved in the Wheeler Webster GAP(see page 4-49). However, some surface locations will require additional mitigation measures to meet attached lease stipulations NSO 18 and CSU 5 for Visual Resource Management Class II. Additional mitigation has been conditioned on a site specific basis and is described in Appendix J, in the Wheeler to Webster GAP for the following surface locations:

PA 33-27

PA 11-28

PA 14-28

PA 43-31

PA 41-32

The following are site specific recommendations to reduce impacts from the proposed action to VRM Class II areas and to the I-70 viewshed.

- 1) Keep facilities along the road in current location for RMV 89-17.
- 2) To reduce impacts to the I-70 viewshed and to VRM Class II, the following surface locations should place all facilities on far north end of the pad:  
 RMV 123-17  
 RMV 40-20  
 RMV 58-20  
 RMV 56-21  
 RMV 132-18
3. All surface locations within VRM Class II areas should utilize 4-plex production packs and low profile tanks to reduce additional surface contrasts and the resulting cumulative impacts. The following are the VRM Class II existing surface locations and previously approved new surface locations that this will apply to:

RWF: 21-18	DOE: 2-W-27	PA: 43-31	GR: 32-34
RWF: 22-18	PA: 11-28	PA: 41-31	GM: 42-35
RWF: 12-19	PA: 12-28	PA: 42-31	GM: 13-35
RWF: 24-19	PA: 14-28	PA: 12-32	GR: 24-35
DOE: 2-W-20	PA: 33-28	PA: 11-32	GM: 34-35
DOE: 1-W-21	DOE: 2-W-29	PA: 22-32	DOE: 1-M-36
DOE: 1-W-26	PA: 34-29	PA: 41-32	GM: 11-36
PA: 13-27	DOE: 1-M-29	PA: 11-33	
DOE: 1-W-27	DOE: 1-W-29	DOE: 1-M-25	

As stated in the Wheeler to Webster Gap, page 4-52, “Future development in the GAP may exceed a threshold beyond which VRM objectives cannot be complied with by applying standard and additional mitigation measures.” The proposed action with site specific mitigation attached should not create any additional long term impacts, excluding surface locations RMV 123-17, RMV 40-20, RMV 58-20, RMV 56-21, 132-18. These sites will meet not meet VRM Class II objectives but will meet Class III. The rest of the proposed project area should conform with prescribed VRM objectives with the attached mitigation.

#### CUMULATIVE IMPACTS SUMMARY:

The 2004 Draft Roan Plateau Resource Management Plan Amendment & Environmental Impact Statement released in November, 2004 (DEIS, 2004) analyzed 5 alternatives for oil and gas development in the Roan Plateau planning area. These alternatives assessed impacts, including cumulative impacts, for oil and gas development scenarios ranging from 855 to 1582 new gas wells on public lands. The drilling of the wells addressed in this Environmental Assessment is well below the low range of development analyzed in the DEIS.

Since the completion of the 1999 Oil and Gas Leasing and Development FSEIS, the number of wells analyzed in subsequent NEPA documents has exceeded the 230 federal wells forecast in the RFD for lands outside the NOSR Production Area. However, drilling technology advancements has drastically reduced the expected surface disturbance of 3.4 acres per well or 1,020 acres from Federal wells analyzed in the 1999 FSEIS. The FSEIS analysis was based on a reasonably foreseeable development scenario, including the numbers of wells, well spacing, equipment necessary, and assumed emission rates. Since completion of the FSEIS, the majority of new wells has been drilled directionally and, in many instances, are being drilled from existing well pads, thereby reducing the overall anticipated surface impact addressed in the 1999 FSEIS.

The air quality analysis conducted in the 2004 DEIS does assess the impacts to the airshed from oil and gas development within and around the Roan Plateau Planning Area. The proposed action addressed in this document, which could include well pad and/or road construction, well drilling and well completion work typical for oil and gas development, would not represent an increase in emissions beyond that anticipated in the 2004 DEIS.

PERSONS / AGENCIES CONSULTED:

Lars Inman, Williams Production RMT, Denver.  
 Donald Davis, Cave Specialist.  
 Kraig Kuberry, Garfield County Road and Bridge.  
 Marvin Stephens, Garfield County Road and Bridge.  
 WestWater Engineering , Grand Junction.

INTERDISCIPLINARY REVIEW:

<u>Name</u>	<u>Title</u>	<u>Area of Responsibility</u>
Mike McGuire	Rangeland Management Spec.	Range management.
Cheryl Harrison	Archeologist	Cultural Resources/Native American Concerns.
Kay Hopkins	Outdoor Recreation Planner	Visual, ACEC, Wilderness, WSR.
Tom Fresques	Wildlife Biologist	Wildlife.
Mark Wimmer	Rangeland Management Spec.	Soils.
Carla Scheck	Ecologist	T&E, Sensitive species.
Jim Wilkinson	Geologist	Geology and Minerals.
Mike Kinser	Rangeland Management Spec.	Riparian.
McVehil-Monnett Associates Inc.		Air Quality

**FONSI****CO-140-2004-047EA**

The environmental assessment analyzing the environmental effects of the proposed action have been reviewed. The proposed action with any approved mitigation measures result in a Finding of No Significant Impact on the human environment. Therefore, an environmental impact statement is not necessary to further analyze the environmental effects of the proposed action.

**DECISION RECORD**

DECISION AND RATIONALE: It is my decision to implement to proposed action as described herein and approve the Applications for Permit (APD) for all the wells identified in Appendix B of the Proposed Action with the exception the wells associated the PA 33-27 and PA 41-29 surface locations. See Wheeler to Webster Geographic Area Plan CO-140-2001-48 FONSI for rationale for not permitting wells on these locations.

The wells associated with the PA 33-27 and PA 41-29 are:

PA 441-29  
PA 541-29  
PA 432-27  
PA 433-27  
PA 533-27  
PA 633-27.

This decision does not modify any lease terms and stipulations attached to the specific leases involved. Updates and amendments to the Geographic Area Plan may be made over the course of the term of the drilling program. Depending on the magnitude of the changes in the future, additional NEPA compliance documentation may be necessary if determined to be outside the scope of the analysis.

The rationale for selecting the Proposed Action:

1. Approval of the proposed action is validating the rights granted with the federal oil and gas leases to develop the leasehold to provide commercial commodities of oil and gas.
2. The environmental impacts have been mitigated with measures included in the Surface Use Plan and the attached Conditions of Approval.

MITIGATION MEASURES: Mitigation Measure for the Proposed Action are listed in the environmental assessment. Standard and Site-Specific Mitigation Measures outlined in Appendix E and F and included in individuals APDs.

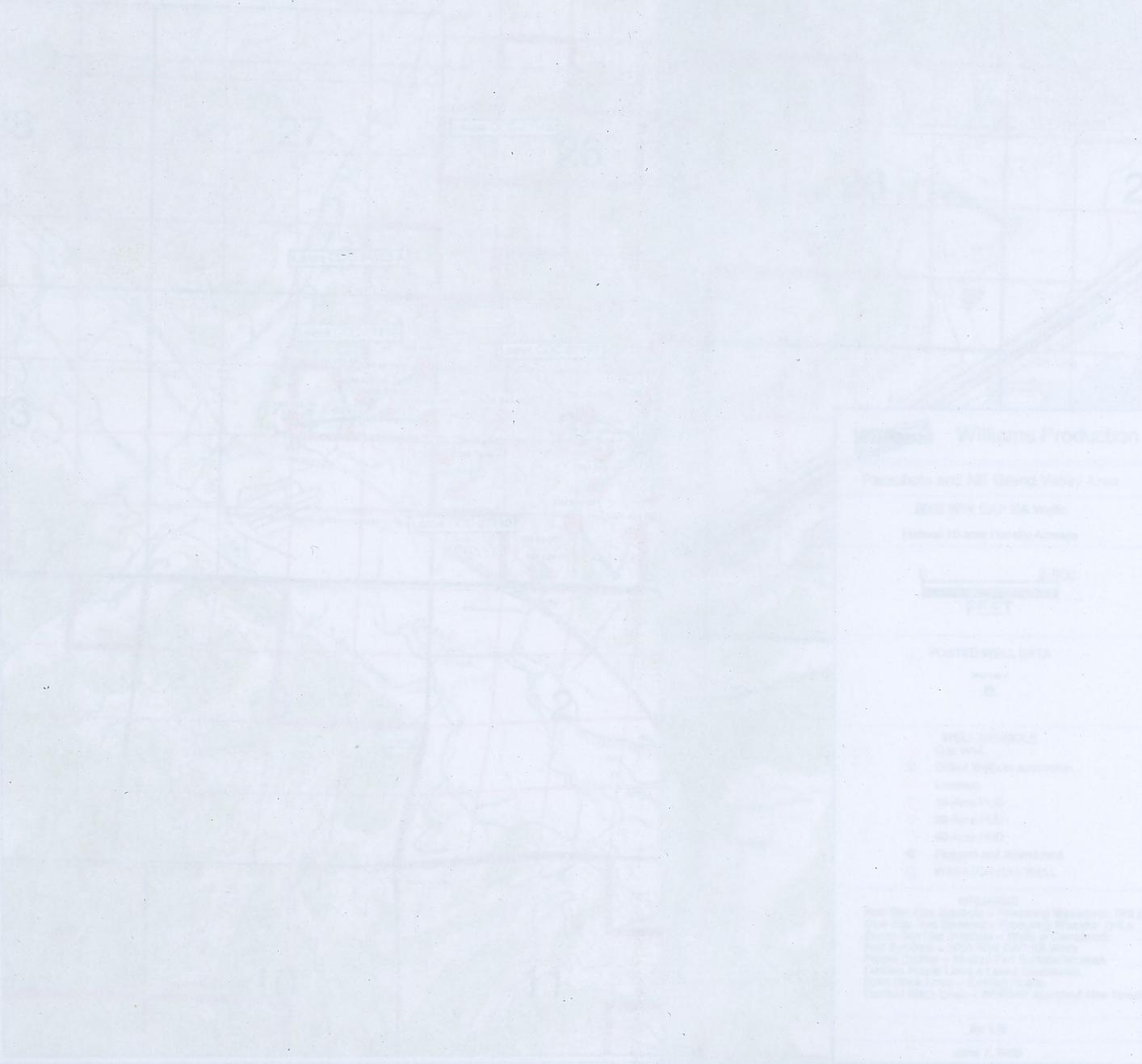
NAME OF PREPARER: Bill Barter

SIGNATURE OF AUTHORIZED OFFICIAL:

*[Handwritten Signature]*  
Authorized Officer

DATE SIGNED: 5-24-2005

APPENDICES: Appendix A,B,C,D,E,F.



**Williams Production**  
 Production and NE Grand Valley Area  
 2005 WPA GUP SA Map  
 Federal 100% Lease Acquire

Scale: 1" = 1000 FEET

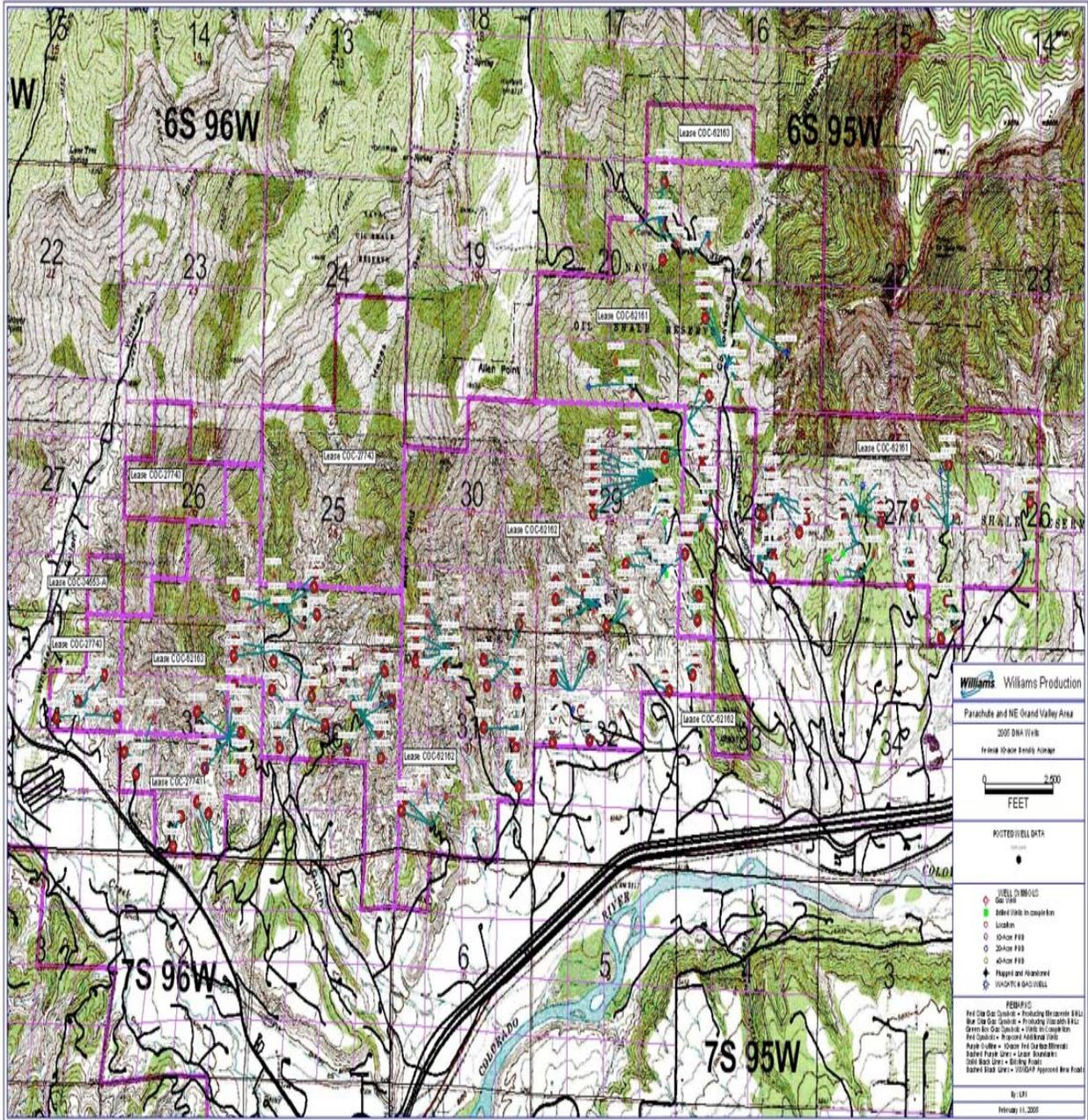
**PLATED WELL DATA**

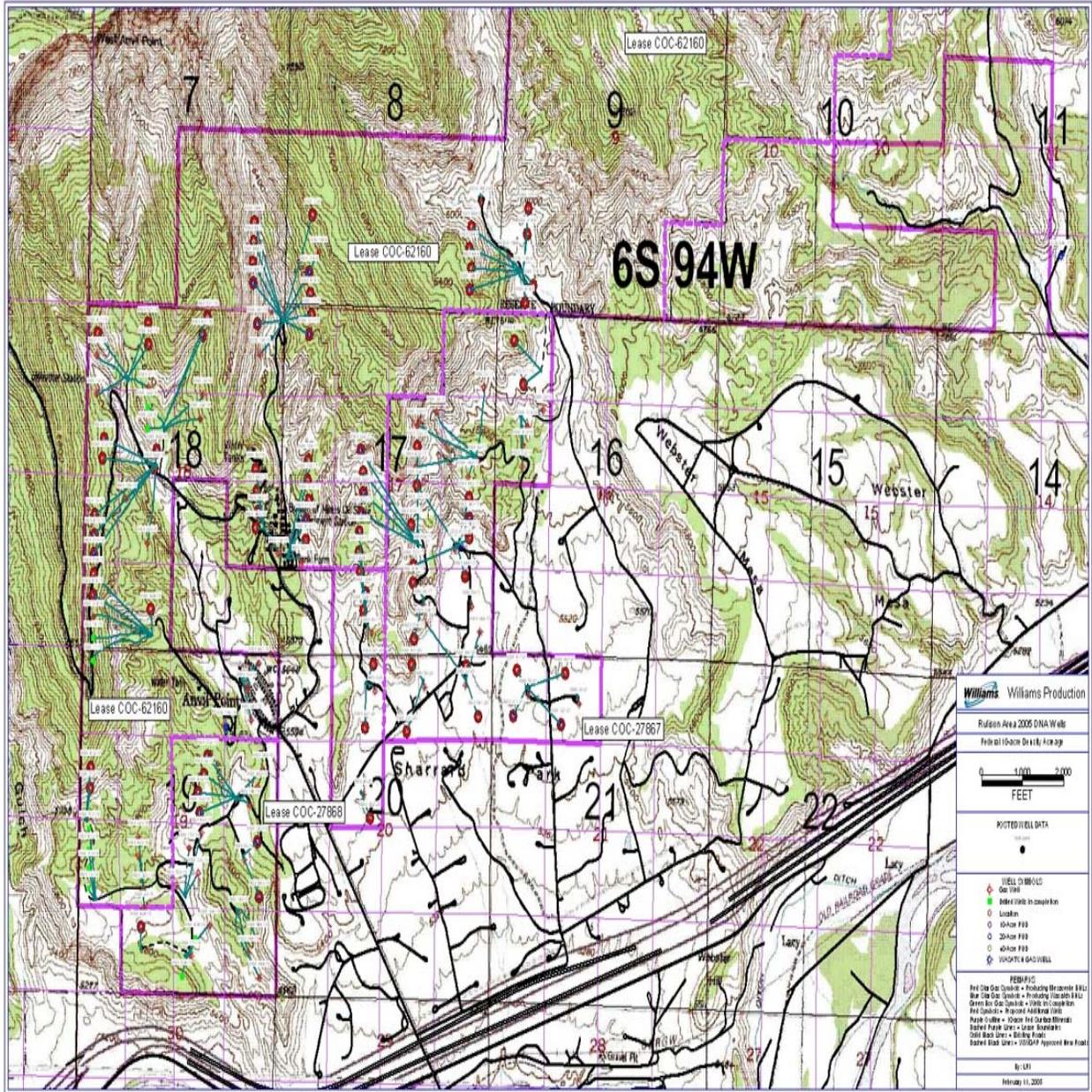
- WELL ID
- WELL TYPE
- WELL STATUS
- WELL DATE
- WELL DEPTH
- WELL DIAMETER
- WELL LOCATION

**APPENDICES**

Appendix A - Well Locations  
 Appendix B - Well Data  
 Appendix C - Well Status  
 Appendix D - Well Date  
 Appendix E - Well Depth  
 Appendix F - Well Diameter

Page 1 of 1  
 Date: 5/24/05





**Wells to be Added to Approved W-W GAP/other EA Surface Locations**  
(data is as of January 26, 2004)

**From 2002 W-W GAP EA/2004 DNA/other**

**Proposed Additions to Approved Locations**

<u>EA</u>		<u>Locations</u>			
Existing Wells/Surface Location	New Surface Location (previously approved)	EA Ref.	Additional Wells to Approved Pad	Status of well	Lease Number/ Comments
NOSR 1XM9  DOE 1-W-9		other	RWF 44-8	'05 DNA	COC-62160
			RWF 344-8	'05 DNA	COC-62160
			RWF 444-8	'05 DNA	COC-62160
			RWF 544-8	'05 DNA	COC-62160
			RMV 165-9	'05 DNA	COC-62160
			RWF 314-9	'05 DNA	COC-62160
			RWF 414-9	'05 DNA	COC-62160
			RWF 514-9	'05 DNA	COC-62160
	RWF 11-16	WWGAP	RWF 411-16	'05 DNA	COC-27867
			RWF 511-16	'05 DNA	COC-27867
RMV 38-17		other	RWF 434-17	'05 DNA	COC-27867
			RWF 534-17	'05 DNA	COC-27867
RMV 60-17		other	RMV 167-17	'05 DNA	COC-62160
			RWF 323-17	'05 DNA	COC-62160
			RWF 324-17	'05 DNA	COC-27868

			RWF 424-17	'05 DNA	COC-27868
			RWF 524-17	'05 DNA	COC-27868
RMV 89-17 RWF 333-17		other	RWF 423-17	'05 DNA	COC-62160
			RWF 523-17	'05 DNA	COC-62160
			RWF 22-17	'05 DNA	COC-62160
			RWF 322-17	'05 DNA	COC-62160
			RWF 433-17	'05 DNA	COC-27867
			RWF 532-17	'05 DNA	COC-27867
MV 9-17 DOE 9-17-W		other	RWF 533-17	'05 DNA	COC-27867
			RWF 632-17	'05 DNA	COC-27867
			RWF 343-17	'05 DNA	COC-27867
			RWF 443-17	'05 DNA	COC-27867
			RWF 543-17	'05 DNA	COC-27867
			RWF 444-17	'05 DNA	COC-27867
RMV 123-17		other	RMV 168-17	'05 DNA	COC-62160
			RWF 312-17	'05 DNA	COC-62160
			RWF 313-17	'05 DNA	COC-62160
			RWF 413-17	'05 DNA	COC-62160
			RWF 513-17	'05 DNA	COC-62160

DOE 1-M-18		other	RWF 44-7	'05 DNA	COC-62160
DOE 1-M-8			RWF 344-7	'05 DNA	COC-62160
			RWF 444-7	'05 DNA	COC-62160
			RWF 544-7	'05 DNA	COC-62160
			RWF 341-18	'05 DNA	COC-62160
			RWF 13-8	'05 DNA	COC-62160
			RWF 314-8	'05 DNA	COC-62160
			RWF 414-8	'05 DNA	COC-62160
			RWF 11-17	'05 DNA	COC-62160
			RWF 311-17	'05 DNA	COC-62160
RMV 132-18		other	RWF 343-18	'05 DNA	COC-62160
			RWF 443-18	'05 DNA	COC-62160
			RWF 543-18	'05 DNA	COC-62160
			RWF 42-18	'05 DNA	COC-62160
RWF 11-18		WWGAP	RWF 411-18	'05 DNA	COC-62160
RWF 12-18			RWF 421-18	'05 DNA	COC-62160
RWF 21-18			RWF 521-18	'05 DNA	COC-62160
RWF 22-18		WWGAP	RWF 431-18	'05 DNA	COC-62160
RWF 322-18			RWF 531-18	'05 DNA	COC-62160
RWF 32-18					
RWF 332-18					

RWF 14-18 RWF 314-18 RWF 11-19		WWGAP	RWF 414-18 RWF 514-18 RWF 424-18	'05 DNA '05 DNA '05 DNA	COC-62160 COC-62160 COC-62160
RMV 169-18 RWF 323-18		WWGAP	RWF 412-18 RWF 512-18 RWF 422-18 RWF 522-18 RWF 13-18 RWF 313-18 RWF 413-18	'05 DNA '05 DNA '05 DNA '05 DNA '05 DNA '05 DNA '05 DNA	COC-62160 COC-62160 COC-62160 COC-62160 COC-62160 COC-62160 COC-62160
RMV 63-19		other	RWF 343-19 RWF 443-19	'05 DNA '05 DNA	COC-27868 COC-27868
RMV 144-19 RWF 342-19 RWF 442-19		other	RWF 32-19 RWF 332-19 RWF 432-19 RWF 532-19	'05 DNA '05 DNA '05 DNA '05 DNA	COC-27868 COC-27868 COC-27868 COC-27868
	RWF 12-19	WWGAP	RWF 412-19 RWF 512-19	'05 DNA '05 DNA	COC-62160 COC-62160

	RWF 24-19	WWGAP	RWF 424-19	'05 DNA	COC-27868
RMV 6-20		other	RWF 421-20 RWF 521-20	'05 DNA '05 DNA	COC-27868 COC-27868
RMV 33-20 RWF 334-17 RWF 344-17		other	RWF 441-20 RWF 541-20	'05 DNA '05 DNA	COC-27867 COC-27867
RMV 40-20		other	RWF 422-20	'05 DNA	COC-27868
RMV 58-20		other	RWF 431-20 RWF 531-20	'05 DNA '05 DNA	COC-27867 COC-27867
RMV 56-21		other	RWF 311-21 RWF 411-21 RWF 321-21 RWF 421-21	'05 DNA '05 DNA '05 DNA '05 DNA	COC-27867 COC-27867 COC-27867 COC-27867
DOE 2-W-20 PA 32-20 PA 42-20 PA 342-20		WWGAP	PA 441-20 PA 541-20 PA 442-20	'05 DNA '05 DNA '05 DNA	COC-62161 COC-62161 COC-62161

DOE 1-W-21 PA 24-21 PA 324-21 PA 424-21 PA 524-21		WWGAP	PA 313-21 PA 413-21 PA 513-21	'05 DNA '05 DNA '05 DNA	COC-62161 COC-62161 COC-62161
DOE 1-W-26		WWGAP	PA 422-26 PA 522-26	'05 DNA '05 DNA	COC-62161 COC-62161
PA 13-27 PA 313-27		WWGAP	PA 412-27 PA 512-27	'05 DNA '05 DNA	COC-62161 COC-62161
DOE 1-W-27 PA 12-27 PA 312-27 PA 22-27 PA 322-27		WWGAP	PA 422-27 PA 522-27	'05 DNA '05 DNA	COC-62161 COC-62161
	PA 33-27	WWGAP	PA 432-27 PA 433-27 PA 533-27 PA 633-27	'05 DNA '05 DNA '05 DNA '05 DNA	COC-62161 COC-62161 COC-62161 COC-62161
DOE 2-W-27 PA 32-27		WWGAP	PA 41-27 PA 341-27	'05 DNA '05	COC-62161 COC-62161

PA 42-27				DNA	
PA 44-27 PA 344-27		WWGAP	PA 444-27 PA 544-27	'05 DNA '05 DNA	COC-62161 COC-62161
	PA 11-28	WWGAP	PA 411-28 PA 511-28 PA 414-21 PA 514-21	'05 DNA '05 DNA '05 DNA '05 DNA	COC-62161 COC-62161 COC-62161 COC-62161
PA 12-28 PA 312-28 PA 313-28		WWGAP	PA 412-28 PA 512-28 PA 413-28 PA 613-28	'05 DNA '05 DNA '05 DNA '05 DNA	COC-62161 COC-62161 COC-62161 COC-62161
	PA 14-28	WWGAP	PA 414-28 PA 514-28	'05 DNA '05 DNA	COC-62161 COC-62161
PA 33-28 PA 333-28		WWGAP	PA 433-28 PA 533-28 PA 633-28	'05 DNA '05 DNA '05 DNA	COC-62161 COC-62161 COC-62161
DOE 1-W-28		other	PA 332-28	'05 DNA	COC-62161

PA 32-28			PA 432-28	'05 DNA	COC-62161
			PA 532-28	'05 DNA	COC-62161
			PA 42-28	'05 DNA	COC-62161
			PA 342-28	'05 DNA	COC-62161
			PA 43-28	'05 DNA	COC-62161
DOE 2-W-29		WWGAP	PA 22-29	'05 DNA	COC-62162
PA 31-29			PA 322-29	'05 DNA	COC-62162
PA 331-29			PA 422-29	'05 DNA	COC-62162
PA 32-29			PA 522-29	'05 DNA	COC-62162
PA 332-29			PA 21-29	'05 DNA	COC-62162
			PA 321-29	'05 DNA	COC-62162
			PA 431-29	'05 DNA	COC-62162
PA 34-29		WWGAP	PA 434-29	'05 DNA	COC-62162
PA 334-29			PA 534-29	'05 DNA	COC-62162
	PA 41-29	WWGAP	PA 441-29	'05 DNA	COC-62162
			PA 541-29	'05 DNA	COC-62162
DOE 1-M-29		WWGAP	PA 513-28	'05 DNA	COC-62161
DOE 1-W-29			PA 533-29	'05 DNA	COC-62162
PA 33-29					
PA 433-29(p&a)					

PA 433-29R PA 343-29 PA 443-29 PA 44-29					
DOE 2-M-29  DOE 3-W-29  PA 14-29  PA 23-29		other	PA 314-29  PA 414-29  PA 514-29  PA 323-29  PA 324-29  PA 424-29	'05 DNA '05 DNA '05 DNA '05 DNA '05 DNA '05 DNA	COC-62162  COC-62162  COC-62162  COC-62162  COC-62162  COC-62162
DOE 1-M-31  PA 13-31 PA 23-31		other	PA 14-31  PA 514-31	'05 DNA '05 DNA	COC-62162  COC-62162
DOE PM 2-31  PA 14-30  PA 24-30  PA 11-31  PA 22-31		other	PA 314-30  PA 311-31  PA 411-31  PA 511-31  PA 321-31  PA 421-31	'05 DNA '05 DNA '05 DNA '05 DNA '05 DNA '05 DNA	COC-62162  COC-62162  COC-62162  COC-62162  COC-62162  COC-62162
	PA 41-31	WWGAP	PA 44-30  PA 344-30 PA 441-31	'05 DNA '05 DNA '05 DNA	COC-62162  COC-62162 COC-62162

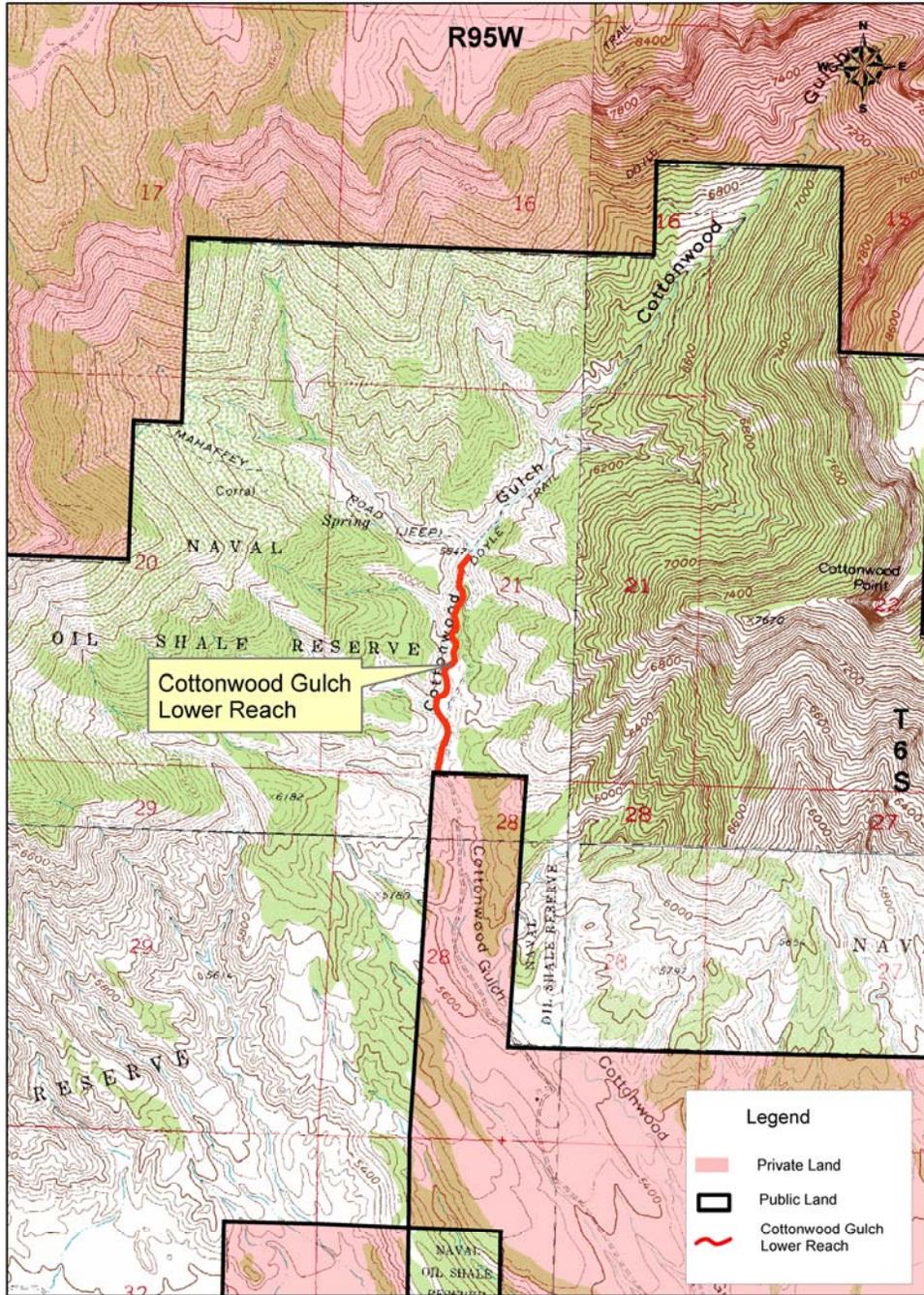
			PA 541-31	DNA '05	COC-62162
			PA 431-31	DNA '05	COC-62162
			PA 532-31	DNA	COC-62162
PA 42-31		WWGAP	PA 432-31	'05 DNA	COC-62162
			PA 442-31	'05 DNA	COC-62162
			PA 542-31	'05 DNA	COC-62162
PA 43-31		WWGAP	PA 443-31	'05 DNA	COC-62162
			PA 543-31	'05 DNA	COC-62162
PA 11-32		WWGAP	PA 411-32	'05 DNA	COC-62162
PA 311-32			PA 511-32	'05 DNA	COC-62162
			PA 421-32	'05 DNA	COC-62162
			PA 521-32	'05 DNA	COC-62162
PA 12-32		WWGAP	PA 412-32	'05 DNA	COC-62162
			PA 512-32	'05 DNA	COC-62162
PA 22-32		WWGAP	PA 422-32	'05 DNA	COC-62162
			PA 522-32	'05 DNA	COC-62162
	PA 41-32	WWGAP	PA 441-32	'05	COC-62162

			PA 541-32	DNA '05 DNA	COC-62162
	PA 11-33	WWGAP	PA 411-33 PA 511-33	'05 DNA '05 DNA	COC-62162 COC-62162
DOE 1-M-25 GM 13-25 GM 24-25 GM 44-26		WWGAP	GM 444-26 GM 414-25 GM 23-25 GM 424-25 GM 524-25	'05 DNA '05 DNA '05 DNA '05 DNA	COC-62163 COC-62163 COC-27743 COC-62163 COC-62163
GR 32-34 GM 332-34 GM 42-34 GM 342-34		WWGAP	GM 432-34 GM 532-34 GM 442-34 GM 542-34	'05 DNA '05 DNA '05 DNA '05 DNA	COC-27743 COC-27743 COC-27743 COC-27743
DOE 1-M-35 GM 42-35 GM 33-35 GM 43-35		WWGAP	GM 342-35 GM 442-35 GM 542-35 GM 432-35 GM 333-35 GM 433-35 GM 443-35	'05 DNA '05 DNA '05 DNA '05 DNA '05 DNA '05 DNA	COC-27743 COC-27743 COC-27743 COC-62163 COC-27743 COC-27743 COC-27743

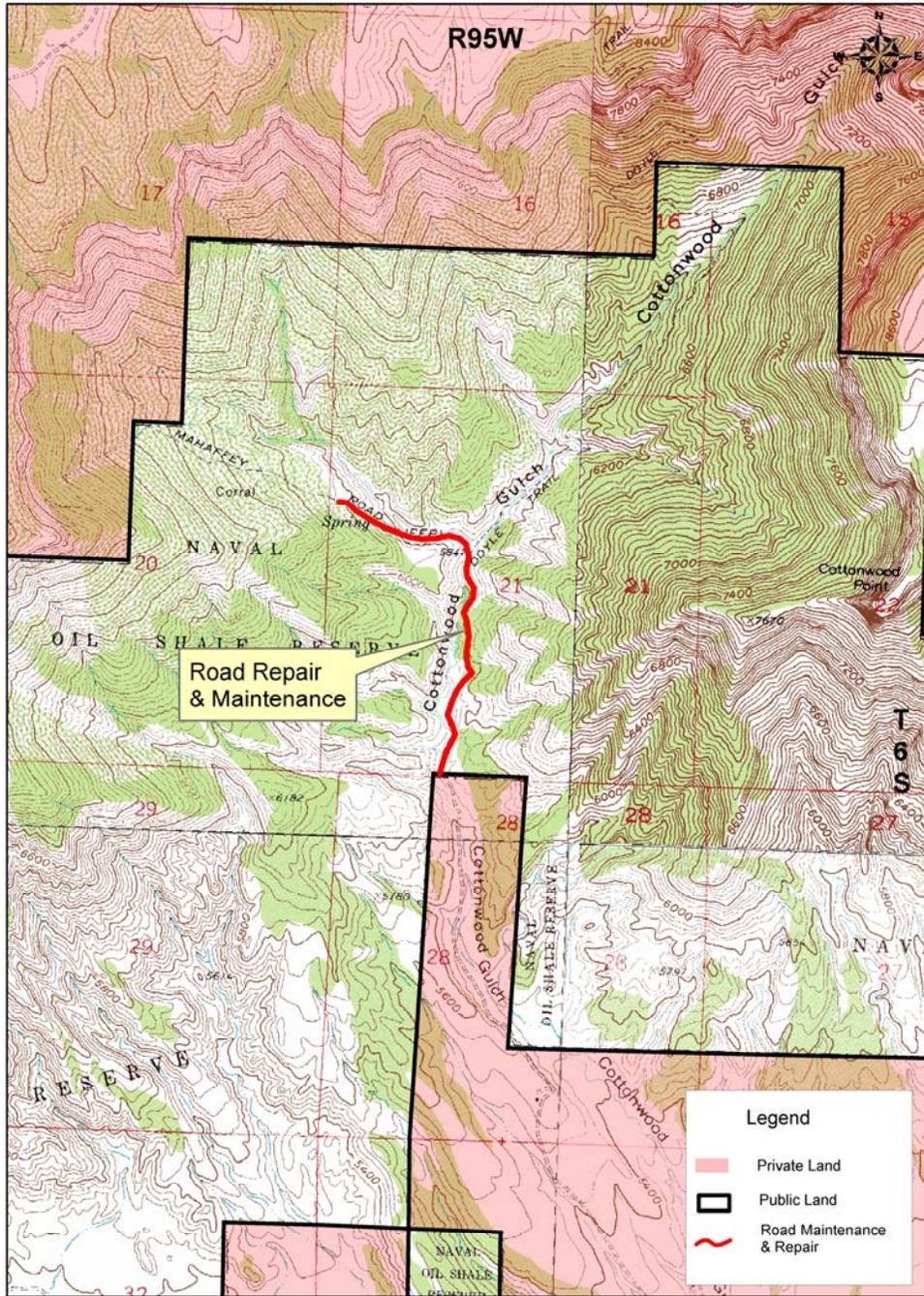
			GM 543-35	DNA '05 DNA	COC-27743
DOE 2-M-35		WWGAP	GM 413-35	'05 DNA	COC-27743
GM 13-35			GM 513-35	'05 DNA	COC-27743
GR 24-35		WWGAP	GM 424-35	'05 DNA	COC-27743
			GM 524-35	'05 DNA	COC-27743
	GM 34-35	WWGAP	GM 434-35	'05 DNA	COC-27743
			GM 534-35	'05 DNA	COC-27743
DOE 1-M-36		WWGAP	GM 412-36	'05 DNA	COC-62163
			GM 512-36	'05 DNA	COC-62163
			GM 421-36	'05 DNA	COC-62163
			GM 422-36	'05 DNA	COC-62163
			GM 511-36	'05 DNA	COC-62163
	GM 11-36	WWGAP	GM 441-35	'05 DNA	COC-62163
			GM 541-35	'05 DNA	COC-62163
			GM 411-36	'05 DNA	COC-62163
			GM 321-36	'05 DNA	COC-62163
DOE 2-M-36		other	GM 331-36	'05	COC-62163

GM 31-36		GM 431-36	DNA '05	COC-62163
GM 41-36		GM 332-36	DNA '05	COC-62163
GM 42-36		GM 432-36	DNA '05	COC-62163
		GM 341-36	DNA '05	COC-62163
		GM 441-36	DNA '05	COC-62163
		GM 541-36	DNA '05	COC-62163
		GM 342-36	DNA '05	COC-62163
		GM 442-36	DNA	COC-62163
Existing Locations to be Revisited	New Locations to Build (previously approved)	Total Proposed Additional Wells		
<b>47</b>	<b>12</b>	<b>213</b>		

Wetlands and Riparian Areas - Cottonwood Gulch Lower Reach



Wetlands and Riparian Areas Mitigation



## **2005 WW-GAP EA - Anvil Points Cave Area Drilling Activity**

Any and all surface locations that have been identified to be revisited for the purposes of drilling and completing natural gas wells as part of the 2005 WW-GAP EA are in accordance with No Surface Occupancy – NSO 19 (Record of Decision and Resource Management Plan Amendment; March, 1999).

***“NSO 19. Anvil Points Cave Area.** For the protection of the scientific and wildlife values provided by these caves and to avoid the difficulties inherent in drilling such locations, no surface occupancy will be permitted in the area encompassing the cave openings, subsurface features and the watersheds immediately above the caves.*

*Exceptions: No exceptions are identified.”*

Williams agrees with the BLM that NSO 19 adequately protects the Anvil Points Cave area as described above and that Williams intends to comply with this stipulation. In addition, it is the professional opinion of the project geologists and engineers that the drilling and completion activity associated with any and all bottom-hole locations that are located within the limits of the NSO 19 boundary will have no significant impact on the structural integrity of the cave complex.

There are two caves that make up the Anvil Points Cave complex, the “North Anvil Points Claystone Cave” and the “South Anvil Points Cave Group.” The surface entrances to the Anvil Points Caves and the orientation and subsurface features of the cave complex itself are all contained within the geographic area that is designated within NSO 19 (Section 17, R6S 94W, S/2 NW qtr and NESW qtr). The cave survey data that has been acquired by Donald Davis (303-355-5283) and his colleagues reveals that, between both of the caves, there is a maximum of 180 feet of vertical relief and their general orientation is north-northeast (see attached map). Seismic data that has been acquired in the vicinity of NSO 19 for use in evaluating deep gas reservoirs does not image shallow features. Therefore, as of the release of this document, the survey data obtained by Donald Davis et al is the most current interpretation of the vertical and lateral extent of the Anvil Points Cave complex.

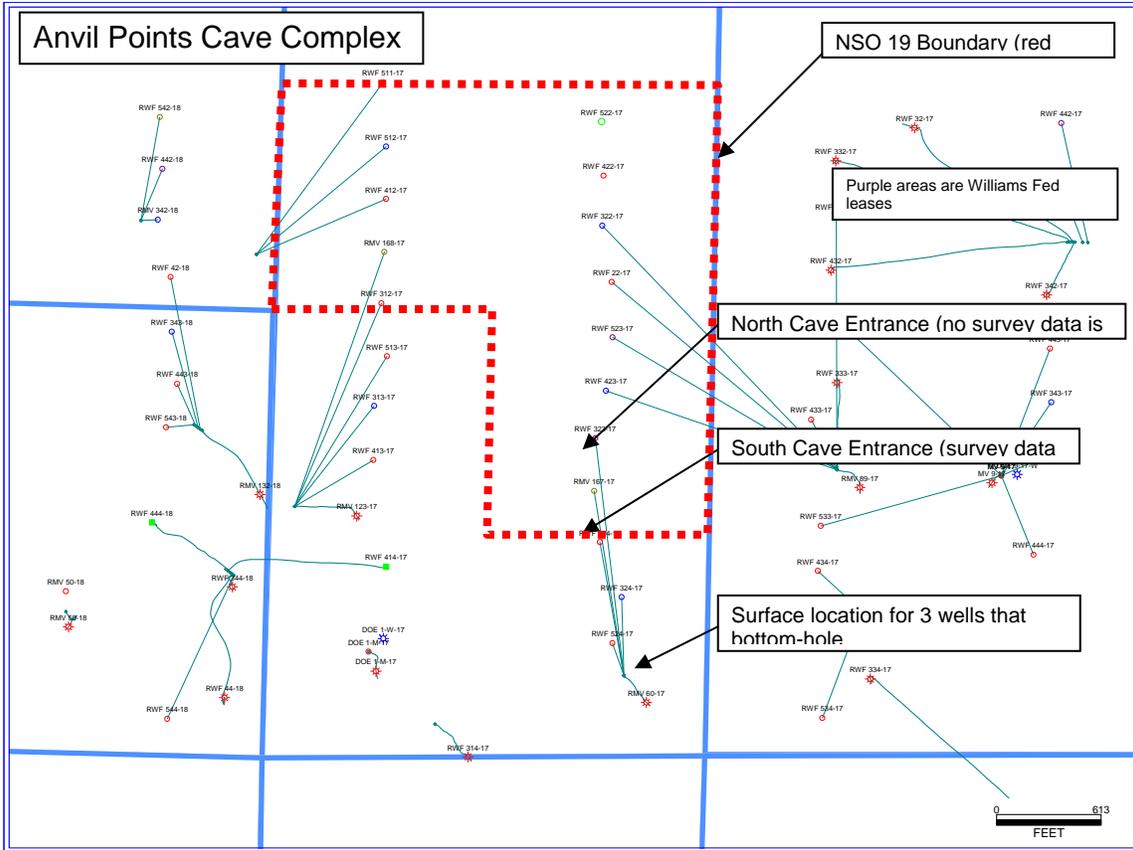
There are four surface locations included in the 2005 WW-GAP EA that surround the NSO 19 boundary. These locations will be used to access 18 bottom-hole locations, 8 of which fall under the NSO 19 boundary, and 3 of which lie below the cave complex (plan view, see attached map). At the time of the drilling of the wells in question, the “wellbore to cave” minimum distance will be approximately 1300ft during the initial drilling of the surface hole. As these wells are drilled deeper, this distance will increase to the total depth of the wells, +/- 8000ft. The approximate distance between the shallowest fracture stimulated sand and the cave floor will be roughly 6000ft (see attached diagram). The hydraulic fractures are contained by bounding shales and should not have a vertical growth greater than 50ft. A Denver-based company, Pinnacle Technologies, has conducted surface deformation monitoring and mapping during the drilling and completion/fracture stimulation of natural gas wells. “A typical hydraulic

fracture treatment at a 7000ft depth results in induced surface tilts of only 10 nanoradians (10 parts in a billion). These miniscule tilts are measured with highly sensitive tiltmeters that operate on the same principle as a carpenter's level (see attached .pdf)." Pinnacle Technologies' expert opinions are available should they be deemed necessary (720-344-3464, Trent Green). Another outfit, based in Golden, Colorado, namely Matheson Mining Consultants, is available as well for comment (303-456-5638, Colin Matheson).

The four surface locations are at lower elevations than the cave entrances and are a minimum of 700ft (plan view) away from the NSO 19 boundary. All of these surface locations currently have existing wells on the drilling pads and therefore it can be concluded that surface noise/sound waves during the previous drilling and completion activity did not affect the integrity of the caves and will not affect them in the future.

Any drilling fluid loss that has occurred in the Rulison field has been at a depth of approximately 2000ft in Wasatch sands that are confined by shales. No vertical migration of drilling fluids has been documented and to date there has been no indication that any of these fluid losses can be attributed to subsurface voids and/or cave formations.

Williams recognizes that unforeseen geologic features (e.g., faults, fractures) may exist in the subsurface and that the wells to be drilled around and under the NSO 19 boundary may encounter these features which may be connected to the cave complex; however, this is highly unlikely. Williams recognizes that naturally occurring phenomena such as, but not limited to, rainwater, snow, sleet, hail, thunder, lightning, tornadoes, earthquakes and any other unforeseen human are beyond our control. Therefore, any affect the aforementioned events may have on the Anvil Points Cave complex should not be attributed to the drilling and/or completion operations of Williams Production.



## Standard Mitigation for all GAP Wells

### I. Roads:

1. All BLM roads in Cottonwood Gulch will be subject to gravelling by December 1, 2005. The type of gravel to be used will include the use of one of the following:
  - 1 ½ inch CDOT (Colorado Department of Transportation) Class 5 gravel wet and rolled in.
  - Locally obtained road materials approved by the Authorized Officer
2. Graveling of roads should be periodically re-graveled as directed by the authorized officer. Initial gravel application will be a minimum of 4 inches. When rutting within the traveled way becomes greater than 6 inches, additional gravel will be applied.
3. All culverts that have currently failed or culverts not aligned in the natural drainage of the channel should be replaced and aligned with the natural channel of the drainage with a gradient that maintains the natural drainage velocity to decrease sedimentation and erosion. Destroyed, damaged or inoperable culverts will be removed from the GAP area and disposed of by Williams Production RMT.
4. The size of the culvert must be large enough to pass a 10-year flood without development of static head at the entrance. Balance the cumulative roadway grade and culvert size to avoid serious head and velocity damage for a 25-year flood (BLM Manual Section 9113, H-a. Drainage Elements). Culverts should be inspected annually to ensure they are functioning properly and promptly maintained (e.g. remove any debris causing blockage) or replaced when necessary.
5. Williams Production RMT will consult with the Army Corps of Engineers (for 404 permits) and from the State of Colorado Water Quality Control Division (for stormwater permits) prior to commencing construction activities related with said permits within the proposed action area. Written documentation to the Authorized Officer is required to indicate that appropriate permits have been obtained or are not required by the permitting agencies.
6. As deemed necessary by the Authorized Officer, geo-textile fabrics or similar material may be required on steep raw areas that are difficult to establish vegetation on, particularly steep road cuts and the larger cut banks around well pads. The use of these soil stabilizing materials will aid in soil retention. To improve vegetation establishment consider the use of hydromulch which will adhere to steep slopes and may assist with vegetation establishment and reduce offsite sediment concerns to downstream fisheries.

## II. Production, Construction, and Reclamation.

1. The operator is responsible for applying dust abatement measures as needed or directed by the Authorized Officer to reduce the emissions of fugitive dust from access roads. The level and type of treatment (watering or application of various dust agents, surfactants and road surfacing material) may be changed in frequency, intensity, etc., and must be approved by the Authorized Officer. Dust control is needed to prevent heavy plumes of dust from road use that create safety problems and disperses heavy amounts of particulate matter on adjacent vegetation. If additional mitigation is required in addition to that already identified in the Wheeler to Webster GAP EA 2002, the operator will coordinate those additions with the Authorized Officer.
2. No plats were with this proposed action. BLM will attached additional Conditions of Approval as deemed necessary by the Authorized Officer upon review of construction plats when provided.
3. A minimum of 2 feet of freeboard will be maintained in the reserve pit, between the maximum fluid level and pad level. Pits will be designed to exclude all surface runoff.
4. All disturbed areas not necessary for drilling and producing operations will undergo reclamation after completing dirtwork and operations (interim reclamation). If the well is a producer, the surface area of the drill pad not needed for facilities or operations and unused portions of the road will be reclaimed to BLM standards. If the well is not a producer “final reclamation” standards apply.
5. Reserve pit fluids will be back filled within one year of construction or to the end of the succeeding summer (August 31) to allow for evaporation of fluids, unless an alternative method of disposal is approved. The back filling of the reserve pit will be done in such a manner that the mud and associated solids will be confined to the pit and not squeezed out and incorporated in the surface materials. There will be a minimum of 3 feet of cover (overburden) on the pit. When work is complete, the pit area will support the weight of heavy equipment without sinking.
6. All pits, cellars, rat holes and other bore holes unnecessary for further lease operations, excluding the reserve pit, will be back-filled immediately after the drilling rig is released to conform to surrounding terrain. Pits, cellars and/or bore holes that remain on location must be fenced as specified for the reserve pit.
7. Compaction and construction of the berms surrounding the tank batteries will be designed to prevent lateral movement of fluids through the utilized materials, prior to storage of fluids. The berms must be constructed to contain at a minimum 110 percent of the storage capacity of the largest tank within the berm. All loading lines will be placed inside the berm.

8. All surface disturbances shall be recontoured and revegetated according to site-specific Condition of Approval in Appendix F.
9. All compacted portions of the pad, road, and pipeline route will be ripped to a depth of 18 inches on 2 foot centers unless in solid rock. Prior to seeding, stockpiled topsoil (stripped surface material) will be spread to a uniform depth that will allow the establishment of desirable vegetation.
10. All slopes reclaimed at a slope steeper than 3:1 will employ extraordinary seeding and/or erosion control measures, such as hydroseeding, mulching and/or geotextiles (to be determined at the time of reclamation by the BLM Authorized Officer).
11. The reclamation contractor shall utilize a seed drill capable of correctly planting the various types of seeds included in the specified seed mixes, at the proscribed rates, and at the appropriate depth. Multiple seed boxes for different types of seed may be necessary.
12. For seed planted using broadcast methods, raking or harrowing immediately before and after seeding will be necessary to ensure adequate seed/soil contact. Compaction of seed after broadcasting with dozer tracks (trackwalking) is acceptable.
13. Reclamation equipment shall be cleaned prior to use in the GAP area to eliminate the potential for spread of noxious weeds or other undesirable non-native species. All leftover seed from prior reclamation jobs will be removed from seeding equipment.
14. The seed mixes to be used and the rate of application of the seed mix is listed at the end of this appendix (Appendix E). The seed mix to be used on a specific site is listed in the COAs for that site. The seed will be certified and there will be no primary or secondary noxious weeds in the seed mixture. The operator shall notify the Authorized Officer 24 hours prior to seeding and shall provide evidence of certification of the above seed mix to the Authorized Officer. The operator shall provide the BLM with a record of dates of seeding, rates of seed applications and seed tags for each seeding operation within 60 days.
15. Areas being reclaimed will be fenced to exclude livestock until the seeded species have established. The type of fencing will be approved by the Authorized Officer.
16. Refer to Appendix I, Surface Reclamation, in the Draft SEIS for Oil and Gas Leasing Development (pages I-1 through I-8) for specific reclamation goals, objectives, timelines, measures and monitoring methods. These guidelines will be applied in completing the reclamation of disturbed surfaces on well pads, access roads, and pipelines.
17. If it is determined by the Authorized Officer that the above reclamation standards are not being met, the operator will be required to submit a plan to correct the problem. Approval of the plan may require special reclamation practices such as mulching, the method and time of planting, the use of different plant species, soil analysis to determine

the need for fertilizer, fertilizing, seed-bed preparation, contour furrowing, watering, terracing, water barring, and the replacement of topsoil.

18. Prior to construction, an Integrated Weed Management Plan (IWMP) shall be developed by Williams in consultation with the BLM for the entire GAP area. This IWMP shall be implemented throughout the development, production, and abandonment phases of the proposed project.

19. The PA 43-31/ PA 42-31 location has an active raptor nest within approximately 1/8 mile. A survey will be required prior to any activities in the area. No construction, drilling, or completion activities are permitted until the young are fledged.

20. Historic, Archaeological and Paleontological:

The operator is responsible for informing all persons in the area who are associated with this project that they will be subject to prosecution for knowingly disturbing historic, archaeological, paleontological, or sites with scientific value or for collecting artifacts. If historic or archaeological materials are uncovered during construction, the operator is to immediately stop work that might further disturb such materials, and contact the Authorized Officer.

#### Education

All persons in the area who are associated with this project must be informed that if anyone is found disturbing historic, archaeological, or scientific resources, including artifacts, the person or persons will be subject to prosecution.

#### Discovery

Pursuant to 43 CFR 10.4(g), the BLM Authorized Officer must be notified, by telephone, with written confirmation, immediately upon the discovery of human remains, funerary items, sacred objects, or objects of cultural patrimony. Further, pursuant to 43 CFR 10.4(c) and (d), activities must stop in the vicinity of the discovery and the discovery must be protected for 30 days or until notified to proceed by the Authorized Officer.

If in connection with operations under this contract the project proponent, its contractors, subcontractors, or the employees of any of them, discovers, encounters, or becomes aware of any objects or sites of cultural or paleontological value or scientific interest, such as historic or prehistoric ruins, graves or grave markers, fossils, or artifacts, the proponent shall immediately suspend all operations in the vicinity of the cultural or paleontological resource and shall notify the BLM Authorized Officer of the findings (16 USC 470h-3, 36 CFR 800.112). Operations may resume at the discovery site upon receipt of written instructions and authorization by the Authorized Officer. Approval to proceed will be based upon evaluation of the resource. Evaluation shall be by a qualified professional selected by the Authorized Officer from a federal agency insofar as practicable. When not practicable, the holder shall bear the cost of the services of a non-federal professional.

Within five working days the Authorized Officer will inform the operator as to:

- whether the materials appear eligible for the National Register of Historic Places;
- the mitigation measures the operator will likely have to undertake before the site can be used (assuming in situ preservation is not necessary); and
- a time frame for the Authorized Officer to complete an expedited review under 36 CFR 800.11 to confirm, through the State Historic Preservation Officer, that the findings of the Authorized Officer are correct and that mitigation is appropriate.

The proponent may relocate activities to avoid the expense of mitigation and/or the delays associated with this process, as long as the new area has been appropriately cleared of resources and the exposed material are recorded and stabilized. Otherwise, the proponent will be responsible for mitigation costs. The Authorized Officer will provide technical and procedural guidelines for the conduct of mitigation. Upon verification from the Authorized Officer that the required mitigation has been completed, the operator will be allowed to resume construction.

Antiquities, historic, prehistoric ruins, paleontological or objects of scientific interest that are outside of the authorization boundaries but directly associated with impacted resources will also be included in this evaluation and/or mitigation.

Antiquities, historic, prehistoric ruins, paleontological or objects of scientific interest, identified or unidentified, that are outside of the authorization and not associated with the resource within the authorization will also be protected. Impacts that occur to such resources that are related to the authorization activities will be mitigated at the proponent's cost.

21. Should scientifically important fossils be encountered during operations, contact the BLM immediately and avoid any damage to the resource. If scientifically important fossils are encountered during operation and cannot be avoided, additional mitigation measures may be necessary.

22. Archaeological monitoring is required for any new construction or excavation adjacent to the RMV 63-19 access road beyond the existing road footprint.

23. Inadvertent Discovery: The National Historic Preservation Act (NHPA) requires that if newly discovered cultural resources are identified during project implementation, work in that area must stop and the agency Authorized Officer notified immediately (36 CFR 800.13). The Native American Graves Protection and Repatriation Act (NAGPRA), requires that if inadvertent discovery of Native American Remains or Objects occurs, activity must cease in the area of discovery, a reasonable effort made to protect the item(s) discovered, and immediate notice made to the BLM Authorized Officer, as well as the appropriate Native American group(s) (IV.C.2). Notice may be followed by a 30-day delay (NAGPRA Section 3(d)). Further actions also require compliance under the provisions of NHPA and the Archaeological Resource Protection Act.

24. All Conditions of Approval established in the Wheeler to Webster GAP, Appendix C, (2002) apply to this proposed action.

25. Paint colors and schemes, such as camouflage, may be considered on a site-specific basis. Any changes must comply with the lease stipulations for that location.

26. Signage: a sign approved by the BLM will be posted at the north and south entrance to the Anvil Points Cave while all drilling, construction, and completion activities are in progress at the RMV 60-17, RMV 123-17, and RMV 89-17. Signs will give notice to cavers to enter the cave at their own risk during these activities.

The seed mixes for this Geographic Area Plan GAP are as follows:

<b>Piñon-Juniper/Sagebrush Seed Mix</b>			
<b>Common Name</b>	<b>Scientific Name</b>	<b>Variety</b>	<b>Pounds PLS/acre</b>
Northern Sweet vetch	<i>Hedysarum boreale</i>		1.0
Four-wing saltbush	<i>Atriplex canescens</i>	Rincon	2.0
Shadscale saltbush	<i>Atriplex confertifolia</i>		2.0
Wyoming big sagebrush	<i>Artemisia tridentata</i> <i>ssp. wyomingensis</i>	Hobble Creek	0.5
Western wheatgrass	<i>Pascopyrum smithii</i>	Arriba	4.0
Bluebunch wheatgrass	<i>Pseudoroegneria</i> <i>spicata</i>		2.0
Salina wild-rye	<i>Elymus salinus</i>		1.5
Galleta	<i>Hilaria jamesii</i>	Viva	1.0
Alkali Sacaton	<i>Sporobolus airoides</i>	Salado	1.0
Sandberg bluegrass	<i>Poa secunda</i>		1.0
<b>Total</b>			<b>16.0</b>

<b>Salt Desert Scrub Seed Mix</b>			
<b>Common Name</b>	<b>Scientific Name</b>	<b>Variety</b>	<b>Pounds PLS/acre</b>
Sainfoin	<i>Onobrychis</i> <i>viciaefolia</i>	Eski	1.0
Four-wing saltbush	<i>Atriplex canescens</i>	Rincon	2.0

Shadscale saltbush	<i>Atriplex confertifolia</i>		2.0
Gardner saltbush	<i>Atriplex gardneri</i>		1.0
Wyoming big sagebrush	<i>Artemisia tridentata</i> <i>ssp. wyomingensis</i>	Hobble Creek	0.5
Western wheatgrass	<i>Pascopyrum smithii</i>	Arriba	4.0
Salina wild-rye	<i>Elymus salinus</i>		1.5
Galleta	<i>Hilaria jamesii</i>	Viva	1.0
Alkali Sacaton	<i>Sporobolus airoides</i>	Salado	2.0
Sandberg bluegrass	<i>Poa secunda</i>		1.0
<b>Total</b>			<b>16.0</b>

### **Site-Specific Mitigation Measures**

**Proposed Well Number: NOSR 1XM9, DOE 1-9-X.**

**Lease Number: COC 62160.**

**2005 EA Well Number: RWF 44-8, RWF 344-8, RWF 444-8, RWF 424-17, RWF 544-8, RMV 165-9, RWF 314-9, RWF 414-9, RWF 514-9.**

1. No new surface disturbance beyond original construction line is permitted.
2. Construct silt fence to prevent sediment from entering creek
3. The recommended seed mix for this well is the Salt Desert Scrub mix.
4. The paint color to be used on all surface facilities is Desert Tan (10YR 6/3).
5. Plans for Reclamation of the Surface: Refer to Appendix I., Surface Reclamation of the 1998 Draft Supplemental Environmental Impact Statement for Oil and Gas Leasing Development (pages I-1 through I-8) for specific reclamation goals, timelines, measuring methods, and monitoring methods. These guidelines will be followed in completing the reclamation of well pads, access roads and pipeline corridors.
6. Appendix E, standard mitigation for all GAP wells (Wheeler to Webster Geographic Area Plan 2005) applies to this location.

Notice: Check the lease for stipulations concerning Timing Limitations, No Surface Occupancy,

### **Site-Specific Mitigation Measures**

**Proposed Well Number: RWF 11-16, RWF 311-16.**

**Lease Number: COC 27867.**

**2005 EA Well Number: RWF 411-16, 511-16**

1. Road across private land may not be constructed until after the stone monument with the historic "Lancaster" inscription has been recorded and evaluated and the landowner has been given the opportunity to remove the rock.
2. The facilities will be located near the existing access road and the new proposed access road, so that wildlife habitat can be mitigated.
3. A 12-inch culvert will be installed on the access road.
4. Excess topsoil will be stored on the southwest side, instead of the northwest, so that potential paleontological locations are not impacted.
5. Drainage will be constructed along the southwest (Corner #1), so that water will drain around the pad and not into the reserve pit.
6. Round corners #5 and #7.
7. Keep slash at the base of fill.
8. The recommended seed mix for this well is the Salt Desert Scrub mix
9. Plans for Reclamation of the Surface: Refer to Appendix I., Surface Reclamation of the 1998 Draft Supplemental Environmental Impact Statement for Oil and Gas Leasing

Development (pages I-1 through I-8) for specific reclamation goals, timelines, measuring methods, and monitoring methods. These guidelines will be followed in completing the reclamation of well pads, access roads and pipeline corridors.

10. Appendix E, standard mitigation for all GAP wells (Wheeler to Webster Geographic Area Plan 2005) applies to this location.

11. No construction, drilling or completion activities from January 1 to February 28 to protect Big-game winter habitat.

12. No new surface disturbance beyond original construction line is permitted.

Notice: Check the lease for stipulations concerning Timing Limitations, No Surface Occupancy,

Appendix I Comments: None.

Appendix J Comments : Will comply with VRM III. Site is 2 miles from I-70, and 3.5 miles from KOP 4 (Holms Mesa). Vegetated with sage, sparse pion/juniper (p/j). Pad is screened from I-70 by terrain. Fill and south side of pad facing KOP 4. Cabin located below toe of fill. Site will not be noticeable from KOP 4 because of distance, relatively low color contrasts. Road adjacent to gulch, will not be visible. Standard mitigation.

### **Site-Specific Mitigation Measures**

**Proposed Well Number: RMV 38-17**

**Lease Number: COC 27867**

**2005 EA Well Number: RWF 434-17, RWF 534-17**

#### **LANDFILL WELL.**

1. The Authorized Officer's Representative is Bill Barter, Glenwood Springs Resource Area and can be notified at 907-947-2800. The Authorized Officer or his representative shall be contacted at least 48 hours prior to the anticipated start of construction and at least 48 hours prior to completion of the project.

2. The operator will notify Kraig Kuberry, District Foreman, Garfield County, at 970-625-8601, prior to moving the drilling and completion equipment on site.

3. A minimum of 2 feet of freeboard will be maintained in the reserve pit between the maximum fluid level and the top of the berm. These pits will be designed to exclude surface runoff.

4. All pits, cellars, rat holes, and other bore holes unnecessary for further lease operations, excluding the reserve pit, will be back-filled immediately after the drilling rig is released to conform to surrounding terrain. Pits, cellars, and/or boreholes that remain on location must be fenced as specified for the reserve pit.
5. Noxious weeds, which may be introduced due to soil disturbance and reclamation, will be treated by methods to be approved by the Authorized Officer. The methods may include biological, mechanical, or chemical treatments. Should chemical treatment be requested, the operator must submit a Pesticide Use Proposal to the Authorized Officer 60 day prior to the planned application date.
6. The operator is responsible for maintenance and repair of segments of the road within the landfill lease that are used by the operator. Responsibility for maintenance and repair is limited to drilling, completion, and recompletion operations, water hauling, construction, and reclamation activities and other operational activities involving the use of heavy trucks and equipment on the landfill road. The intent is to ensure that the operator keeps the landfill road at the same level of condition as prior to operations. Maintenance activities such as dust suppression, grading, and the Authorized Officer will initiate mud removal within 24 hours of notification.
7. All heavy truck traffic necessary for drilling and completion operations is prohibited to access the landfill through the west gate. The operator is authorized to use the access gate at the northeast corner of the property constructed for drilling activities in 1995. Access is from the Langstaff property. The operator is responsible for security of the new gate at the landfill boundary. Operator will provide signage for crossing traffic at the intersection with landfill cell access road.
8. The operator will notify the Garfield County landfill operator (625-2516) prior to activities that will require after hours operations such as drilling, completion, and recompletion activities.
9. The operator should minimize and limit after hours operations (1700- - 0900) Monday through Friday such as supply deliveries, water hauling, and movement of personnel. The operator is responsible for ensuring that the east entrance gate is not left open after landfill operational hours and there will be no unauthorized dumping of trash, hazardous materials, or other materials within the landfill. Every vehicle must use login/logout sheet at east gate. If a violation (east gate is not locked) occurs by the operator or its contractors, the Authorized Officer can require the immediate posting of security guards by the operator and to be approved for the Authorized Officer. The objective of the security guard is to provide objective and neutral monitoring to insure that the gate is kept locked after landfill operational hours. The security guard will remain at the entrance throughout the remainder of the operation taking place.
10. All disturbed areas not necessary for drilling and producing operations (including final abandonment) will undergo the following reclamation standards after completing dirt work and operations. Specifically, if the well is as producer, the surface area of the

drill pad is not needed for facilities or operations will be reclaimed to the standards below within 90 days after completion operations. Also, the entire access road and well pad will be reclaimed if the well is not a producer.

11. The Salt Desert/ Shrub seed mix will be used on all surface disturbances.

12. The operator shall notify the Authorized Officer 24 hours prior to seeding and shall provide the evidence of certification of the above seed mix to the Authorized Officer.

13. All compacted portions of the pad and road will be ripped to a depth of 18 inches unless in solid rock. Prior to seeding, stockpiles topsoil will be spread to a uniform depth. All unused disturbed area will be seeded within 24 hours after completing dirt work unless a change is requested by the operator and approved by the Authorized Officer. If the seedbed has begun to crust over the seed bed must be prepared by disking or some other mechanical means sufficient to allow penetration of the seed into the soil. In addition, the broadcast seed should be covered by using a harrow, dragbar or chain.

14. Plans for Reclamation of the Surface: Refer to Appendix I., Surface Reclamation of the 1998 Draft Supplemental Environmental Impact Statement for Oil and Gas Leasing Development (pages I-1 through I-8) for specific reclamation goals, timelines, measuring methods, and monitoring methods. These guidelines will be followed in completing the reclamation of well pads, access roads and pipeline corridors.

15. The unused disturbed areas surrounding the well location and along the road will be recontoured to blend as nearly as possible with the natural topography. Final grading of back-filled and cut slopes will be done to prevent erosion and encourage establishment of vegetation.

16. If it is determined by the Authorized Officer that the above reclamation standards are not being met, the operator will be required to submit a plan to correct the problem. Approval of the plan may require special reclamation practices such as mulching, the method and time of planting, the use of different plant species, soil analysis, fertilizing, seedbed preparation, contour furrowing, watering, terracing, water barring, and the replacement of topsoil.

17. The buried pipeline will be identified on the surface with markers every 200 feet. The markers will be maintained or replaced as needed. Prior to the abandonment of the pipeline, the operator will meet with the Authorized Officer and the landfill operator to determine if the buried pipeline is a safety problem to existing or future landfill operations. If it is determined by the Authorized Officer, the pipeline will be removed.

18. Compaction and construction of the berms surrounding the tank batteries will be designed to prevent lateral movement of fluids through the utilized materials, prior to storage of fluids. The berms must be constructed to contain at a minimum 110 percent of the storage capacity of the largest tank within the berm. All loading lines will be placed inside the berm.

19. Appendix E, standard mitigation for all GAP wells (Wheeler to Webster Geographic Area Plan 2005) applies to this location.

20. The county personnel will inspect the reserve/production pits and other facilities prior to burial and reclamation.

21. Operator will provide the county with any chemical data on production waters from on-site wells.

Specifically:

Anions:

Carbonate  
Bicarbonate  
Chloride  
Sulfate

Cations:

Calcium (dissolved)  
Magnesium (dissolved)  
Potassium (dissolved)  
Sodium (dissolved)

Miscellaneous:

PH  
Total dissolved solids  
Nitrate (as Nitrogen, dissolved)  
Volatile Organics – EPA 8260

### **Site-Specific Mitigation Measures**

**Proposed Well Number: RMV 60-17**  
**Lease Number: COC 62160, COC 27868**

**2005 EA Well Number: RMV 167-17, RWF 323-17, RWF 324-17, RWF424-17,  
RWF 524-17.**

1. No new surface disturbance beyond construction lines is permitted.
2. The recommended seed mix for this well is the Salt Desert Scrub mix.
3. The paint color to be used on all surface facilities is Desert Tan (10YR 6/3).
4. Plans for Reclamation of the Surface: Refer to Appendix I., Surface Reclamation of the 1998 Draft Supplemental Environmental Impact Statement for Oil and Gas Leasing Development (pages I-1 through I-8) for specific reclamation goals, timelines, measuring methods, and monitoring methods. These guidelines will be followed in completing the reclamation of well pads, access roads and pipeline corridors.

5. Appendix E, standard mitigation for all GAP wells (Wheeler to Webster Geographic Area Plan 2005) applies to this location.
6. No construction, drilling, or completion activities from January 1 to February 28 to protect big-game winter habitat.

Notice: Check the lease for stipulations concerning Timing Limitations, No Surface Occupancy, and Controlled Surface Use.

### **Site-Specific Mitigation Measures**

**Proposed Well Number: RMV 89-17, RWF 333-17**  
**Lease Number: COC 62160, COC 27868**

**2005 EA Well Number: RMV 423-17, RWF 523-17, RWF 22-17, RWF 322-17,  
RWF 433-17, RWF 532-17.**

#### LANDFILL WELL

1. The Authorized Officer's Representative is Bill Barter, Glenwood Springs Resource Area and can be notified at 907-947-2800. The Authorized Officer or his representative shall be contacted at least 48 hours prior to the anticipated start of construction and at least 48 hours prior to completion of the project.
2. The operator will notify Kraig Kuberry, District Foreman, Garfield County, at 970-625-8601, prior to moving the drilling and completion equipment on site.
3. A minimum of 2 feet of freeboard will be maintained in the reserve pit between the maximum fluid level and the top of the berm. These pits will be designed to exclude surface runoff.
4. All pits, cellars, rat holes, and other bore holes unnecessary for further lease operations, excluding the reserve pit, will be back-filled immediately after the drilling rig is released to conform to surrounding terrain. Pits, cellars, and/or boreholes that remain on location must be fenced as specified for the reserve pit.
5. Noxious weeds, which may be introduced due to soil disturbance and reclamation, will be treated by methods to be approved by the Authorized Officer. The methods may include biological, mechanical, or chemical treatments. Should chemical treatment be requested, the operator must submit a Pesticide Use Proposal to the Authorized Officer 60 day prior to the planned application date.
6. The operator is responsible for maintenance and repair of segments of the road within the landfill lease that are used by the operator. Responsibility for maintenance and repair is limited to drilling, completion, and recompletion operations, water hauling, construction, and reclamation activities and other operational activities involving the use

of heavy trucks and equipment on the landfill road. The intent is to ensure that the operator keeps the landfill road at the same level of condition as prior to operations. Maintenance activities such as dust suppression, grading, and the Authorized Officer will initiate mud removal within 24 hours of notification.

7. All heavy truck traffic necessary for drilling and completion operations is prohibited to access the landfill through the west gate. The operator is authorized to use the access gate at the northeast corner of the property constructed for drilling activities in 1995. Access is from the Langstaff property. The operator is responsible for security of the new gate at the landfill boundary. Operator will provide signage for crossing traffic an the intersection with landfill cell access road.

8. The operator will notify the Garfield County landfill operator (625-2516) prior to activities that will require after hours operations such as drilling, completion, and recompletion activities.

9. The operator should minimize and limit after hours operations (1700- - 0900) Monday through Friday such as supply deliveries, water hauling, and movement of personnel. The operator is responsible for ensuring that the east entrance gate in not left open after landfill operational hours and there will be no unauthorized dumping of trash, hazardous materials, or other materials within the landfill. Every vehicle must use login/logout sheet at east gate. If a violation (east gate is not locked) occurs by the operator or its contractors, the Authorized Officer can require the immediate posting of security guards by the operator and to be approved for the Authorized Officer. The objective of the security guard is to provide objective and neutral monitoring to insure that the gate is kept locked after landfill operational hours. The security guard will remain at the entrance throughout the remainder of the operation taking place.

10. All disturbed areas not necessary for drilling and producing operations (including final abandonment) will undergo the following reclamation standards after completing dirtwork and operations. Specifically, if the well is as producer, the surface area of the drill pad is not needed for facilities or operations will be reclaimed to the standards below within 90 days after completion operations. Also, the entire access road and well pad will be reclaimed if the well is not a producer.

11. The Salt Desert/ Shrub seed mix will be used on all surface disturbances.

12. The operator shall notify the Authorized Officer 24 hours prior to seeding and shall provide the evidence of certification of the above seed mix to the Authorized Officer.

13. All compacted portions of the pad and road will be ripped to a depth of 18 inches unless in solid rock. Prior to seeding, stockpiles topsoil will be spread to a uniform depth. All unused disturbed area will be seeded within 24 hours after completing dirt work unless a change is requested by the operator and approved by the Authorized Officer. If the seedbed has begun to crust over the seed bed must be prepared by disking

or some other mechanical means sufficient to allow penetration of the seed into the soil. In addition, the broadcast seed should be covered by using a harrow, dragbar or chain.

14. Plans for Reclamation of the Surface: Refer to Appendix I., Surface Reclamation of the 1998 Draft Supplemental Environmental Impact Statement for Oil and Gas Leasing Development (pages I-1 through I-8) for specific reclamation goals, timelines, measuring methods, and monitoring methods. These guidelines will be followed in completing the reclamation of well pads, access roads and pipeline corridors.

15. The unused disturbed areas surrounding the well location and along the road will be recontoured to blend as nearly as possible with the natural topography. Final grading of back-filled and cut slopes will be done to prevent erosion and encourage establishment of vegetation.

16. If it is determined by the Authorized Officer that the above reclamation standards are not being met, the operator will be required to submit a plan to correct the problem. Approval of the plan may require special reclamation practices such as mulching, the method and time of planting, the use of different plant species, soil analysis, fertilizing, seedbed preparation, contour furrowing, watering, terracing, water barring, and the replacement of topsoil.

17. The buried pipeline will be identified on the surface with markers every 200 feet. The markers will be maintained or replaced as needed. Prior to the abandonment of the pipeline, the operator will meet with the Authorized Officer and the landfill operator to determine if the buried pipeline is a safety problem to existing or future landfill operations. If it is determined by the Authorized Officer, the pipeline will be removed.

18. Compaction and construction of the berms surrounding the tank batteries will be designed to prevent lateral movement of fluids through the utilized materials, prior to storage of fluids. The berms must be constructed to contain at a minimum 110 percent of the storage capacity of the largest tank within the berm. All loading lines will be placed inside the berm.

19. Appendix E, standard mitigation for all GAP wells (Wheeler to Webster Geographic Area Plan 2005) applies to this location.

20. The county personnel will inspect the reserve/production pits and other facilities prior to burial and reclamation.

21. Operator will provide the county with any chemical data on production waters from on-site wells.

Specifically:

Anions:

Carbonate

Bicarbonate  
Chloride  
Sulfate

Cations:

Calcium (dissolved)  
Magnesium (dissolved)  
Potassium (dissolved)  
Sodium (dissolved)

Miscellaneous:

PH  
Total dissolved solids  
Nitrate (as Nitrogen, dissolved)  
Volatile Organics – EPA 8260

22. Keep production facilities at current location.

**Site-Specific Mitigation Measures**

**Proposed Well Number: MV 9-17, DOE 9-17-W**  
**Lease Number: COC 27867**

**2005 EA Well Number: RWF 533-17, RWF 632-17, RWF 343-17, RWF443-17,**  
**RWF 543-17, RWF 444-17.**

**LANDFILL WELL**

1. The Authorized Officer's Representative is Bill Barter, Glenwood Springs Resource Area and can be notified at 907-947-2800. The Authorized Officer or his representative shall be contacted at least 48 hours prior to the anticipated start of construction and at least 48 hours prior to completion of the project.
2. The operator will notify Kraig Kuberry, District Foreman, Garfield County, at 970-625-8601, prior to moving the drilling and completion equipment on site.
3. A minimum of 2 feet of freeboard will be maintained in the reserve pit between the maximum fluid level and the top of the berm. These pits will be designed to exclude surface runoff.
4. All pits, cellars, rat holes, and other bore holes unnecessary for further lease operations, excluding the reserve pit, will be back-filled immediately after the drilling rig is released to conform to surrounding terrain. Pits, cellars, and/or boreholes that remain on location must be fenced as specified for the reserve pit.
5. Noxious weeds, which may be introduced due to soil disturbance and reclamation, will be treated by methods to be approved by the Authorized Officer. The methods may

include biological, mechanical, or chemical treatments. Should chemical treatment be requested, the operator must submit a Pesticide Use Proposal to the Authorized Officer 60 day prior to the planned application date.

6. The operator is responsible for maintenance and repair of segments of the road within the landfill lease that are used by the operator. Responsibility for maintenance and repair is limited to drilling, completion, and recompletion operations, water hauling, construction, and reclamation activities and other operational activities involving the use of heavy trucks and equipment on the landfill road. The intent is to ensure that the operator keeps the landfill road at the same level of condition as prior to operations. Maintenance activities such as dust suppression, grading, and the Authorized Officer will initiate mud removal within 24 hours of notification.

7. All heavy truck traffic necessary for drilling and completion operations is prohibited to access the landfill through the west gate. The operator is authorized to use the access gate at the northeast corner of the property constructed for drilling activities in 1995. Access is from the Langstaff property. The operator is responsible for security of the new gate at the landfill boundary. Operator will provide signage for crossing traffic at the intersection with landfill cell access road.

8. The operator will notify the Garfield County landfill operator (625-2516) prior to activities that will require after hours operations such as drilling, completion, and recompletion activities.

9. The operator should minimize and limit after hours operations (1700- - 0900) Monday through Friday such as supply deliveries, water hauling, and movement of personnel. The operator is responsible for ensuring that the east entrance gate is not left open after landfill operational hours and there will be no unauthorized dumping of trash, hazardous materials, or other materials within the landfill. Every vehicle must use login/logout sheet at east gate. If a violation (east gate is not locked) occurs by the operator or its contractors, the Authorized Officer can require the immediate posting of security guards by the operator and to be approved for the Authorized Officer. The objective of the security guard is to provide objective and neutral monitoring to insure that the gate is kept locked after landfill operational hours. The security guard will remain at the entrance throughout the remainder of the operation taking place.

10. All disturbed areas not necessary for drilling and producing operations (including final abandonment) will undergo the following reclamation standards after completing dirtwork and operations. Specifically, if the well is a producer, the surface area of the drill pad is not needed for facilities or operations will be reclaimed to the standards below within 90 days after completion operations. Also, the entire access road and well pad will be reclaimed if the well is not a producer.

11. The Salt Desert/ Shrub seed mix will be used on all surface disturbances.

12. The operator shall notify the Authorized Officer 24 hours prior to seeding and shall provide the evidence of certification of the above seed mix to the Authorized Officer.
13. All compacted portions of the pad and road will be ripped to a depth of 18 inches unless in solid rock. Prior to seeding, stockpiles topsoil will be spread to a uniform depth. All unused disturbed area will be seeded within 24 hours after completing dirt work unless a change is requested by the operator and approved by the Authorized Officer. If the seedbed has begun to crust over the seed bed must be prepared by disking or some other mechanical means sufficient to allow penetration of the seed into the soil. In addition, the broadcast seed should be covered by using a harrow, dragbar or chain.
14. Plans for Reclamation of the Surface: Refer to Appendix I., Surface Reclamation of the 1998 Draft Supplemental Environmental Impact Statement for Oil and Gas Leasing Development (pages I-1 through I-8) for specific reclamation goals, timelines, measuring methods, and monitoring methods. These guidelines will be followed in completing the reclamation of well pads, access roads and pipeline corridors.
15. The unused disturbed areas surrounding the well location and along the road will be recontoured to blend as nearly as possible with the natural topography. Final grading of back-filled and cut slopes will be done to prevent erosion and encourage establishment of vegetation.
16. If it is determined by the Authorized Officer that the above reclamation standards are not being met, the operator will be required to submit a plan to correct the problem. Approval of the plan may require special reclamation practices such as mulching, the method and time of planting, the use of different plant species, soil analysis, fertilizing, seedbed preparation, contour furrowing, watering, terracing, water barring, and the replacement of topsoil.
17. The buried pipeline will be identified on the surface with markers every 200 feet. The markers will be maintained or replaced as needed. Prior to the abandonment of the pipeline, the operator will meet with the Authorized Officer and the landfill operator to determine if the buried pipeline is a safety problem to exiting or future landfill operations. If it is determined by the Authorized Officer, the pipeline will be removed.
18. Compaction and construction of the berms surrounding the tank batteries will be designed to prevent lateral movement of fluids through the utilized materials, prior to storage of fluids. The berms must be constructed to contain at a minimum 110 percent of the storage capacity of the largest tank within the berm. All loading lines will be placed inside the berm.
19. Appendix E, standard mitigation for all GAP wells (Wheeler to Webster Geographic Area Plan 2005) applies to this location.
20. The county personnel will inspect the reserve/production pits and other facilities prior to burial and reclamation.

21. Operator will provide the county with any chemical data on production waters from on-site wells.

Specifically:

Anions:

Carbonate  
Bicarbonate  
Chloride  
Sulfate

Cations:

Calcium (dissolved)  
Magnesium (dissolved)  
Potassium (dissolved)  
Sodium (dissolved)

Miscellaneous:

PH  
Total dissolved solids  
Nitrate (as Nitrogen, dissolved)  
Volatile Organics – EPA 8260

### **Site-Specific Mitigation Measures**

**Proposed Well Number: RMV 123-17.**

**Lease Number: COC 62160.**

**2005 EA Well Number: RMV 168-17, RWF 312-17, RWF 313-17, RWF413-17, RWF 513-17.**

1. No new surface disturbance beyond the original construction lines is permitted.
2. The paint color to be used on all surface facilities is Desert Tan (10YR 6/3).
3. Plans for Reclamation of the Surface: Refer to Appendix I., Surface Reclamation of the 1998 Draft Supplemental Environmental Impact Statement for Oil and Gas Leasing Development (pages I-1 through I-8) for specific reclamation goals, timelines, measuring methods, and monitoring methods. These guidelines will be followed in completing the reclamation of well pads, access roads and pipeline corridors.
4. Appendix E, standard mitigation for all GAP wells (Wheeler to Webster Geographic Area Plan 2005) applies to this location.
5. Put production facilities at north end of the pad.

Notice: Check the lease for stipulations concerning Timing Limitations, No Surface Occupancy, and Controlled Surface Use.

### **Site-Specific Mitigation Measures**

**Proposed Well Number DOE 1-M-18.**

**Lease Number: COC 62160.**

**2005 EA Well Number: RWF 44-7, RWF 344-7, RWF 444-7, RWF 544-7, RWF 341-18, RWF 13-8, RWF 314-8, RWF 414-8, RWF 11-17, RWF 311-17.**

1. No new surface disturbance is permitted beyond the original construction lines.
2. Reclaim all slopes to 3:1 or flatter.
3. The recommended seed mix for this well is the Salt Desert Scrub mix. The pounds of pure live seed/ acre is provided in the Standard Surface Use Plan, using the application method in the Standard Mitigation Measures for All GAP Wells.
4. The paint color to be used on all surface facilities is Desert Tan (10YR 6/3).
5. Plans for Reclamation of the Surface: Refer to Appendix I., Surface Reclamation of the 1998 Draft Supplemental Environmental Impact Statement for Oil and Gas Leasing Development (pages I-1 through I-8) for specific reclamation goals, timelines, measuring methods, and monitoring methods. These guidelines will be followed in completing the reclamation of well pads, access roads and pipeline corridors.
6. Redesign roadway at creek on access road to storm water per GAP-Wide design parameters.
7. Appendix E, standard mitigation for all GAP wells (Wheeler to Webster Geographic Area Plan 2005) applies to this location.

Notice: Check the lease for stipulations concerning Timing Limitations, No Surface Occupancy, and Controlled Surface Use.

### **Site-Specific Mitigation Measures**

**Proposed Well Number: RWF 21-18, RWF 321-18, RWF 11-18, RWF 12-18.**

**Lease Number: COC 62160.**

**2005 EA Well Number: RWF 411-18, RWF 421-18, RWF 521-18.**

1. No new surface disturbance is permitted beyond the original construction lines.
2. The recommended seed mix for this well is the Piñon-Juniper/Sage mix.
3. The paint color to be used on all surface facilities is Desert Tan (10YR 6/3).
4. Plans for Reclamation of the Surface: Refer to Appendix I., Surface Reclamation of the 1998 Draft Supplemental Environmental Impact Statement for Oil and Gas Leasing Development (pages I-1 through I-8) for specific reclamation goals, timelines, measuring methods, and monitoring methods. These guidelines will be followed in completing the reclamation of well pads, access roads and pipeline corridors.
5. Appendix E, standard mitigation for all GAP wells (Wheeler to Webster Geographic Area Plan 2005) applies to this location.

Notice: Check the lease for stipulations concerning Timing Limitations, No Surface Occupancy, and Controlled Surface Use.

Appendix I Comments: Good soils, but many existing undesirables

Appendix J Comments: Site is in VRM V (needs rehabilitation) area that contains disturbance from old mine and associated facilities. Viewshed of I-70 & KOP 4 (Holms Mesa). 2.0 miles from I-70 & 3.5 miles from KOP 4. Screened from I-70 and KOP 4 views by terrain. Access road will not be visible. Standard mitigation.

### **Site-Specific Mitigation Measures**

**Proposed Well Number: RWF 22-18, RWF 31-18, RWF 32-18, RWF 322-18.  
Lease Number: COC 62160.**

**2005 EA Well Number: RWF 431-18, RWF 531-18.**

1. No new surface disturbance is permitted beyond the original construction lines.
2. The recommended seed mix for this well is the Piñon-Juniper/Sage mix.
3. The paint color to be used on all surface facilities is Desert Tan (10YR 6/3).
4. Plans for Reclamation of the Surface: Refer to Appendix I., Surface Reclamation of the 1998 Draft Supplemental Environmental Impact Statement for Oil and Gas Leasing Development (pages I-1 through I-8) for specific reclamation goals, timelines, measuring methods, and monitoring methods. These guidelines will be followed in completing the reclamation of well pads, access roads and pipeline corridors.
5. Appendix E, standard mitigation for all GAP wells (Wheeler to Webster Geographic Area Plan 2005) applies to this location.

Notice: Check the lease for stipulations concerning Timing Limitations, No Surface Occupancy, and Controlled Surface Use.

Appendix I Comments: Desirable existing cover

Appendix J Comments: Site is in VRM V (needs rehabilitation) area that contains disturbance from old mine and associated facilities. Viewshed of KOP 4 (Holms Mesa). Pad is 3.25 miles from KOP 4. Access road, most of pad and fill will be screened by trees. Once cut is revegetated, it will blend with surrounding slopes forming backdrop of pad. Pad will also not be noticeable because of distance. Standard mitigation.

### **Site-Specific Mitigation Measures**

**Proposed Well Number: RMV 132-18.**  
**Lease Number: COC 62160.**

**2005 EA Well Number: RMV 343-18, RWF 443-18, RWF 543-18, RWF 42-18.**

1. No new surface disturbance is permitted beyond the original construction lines.
2. The recommended seed mix for this well is the Salt Desert Scrub mix.
3. The paint color to be used on all surface facilities is Desert Tan (10YR 6/3).
4. Plans for Reclamation of the Surface: Refer to Appendix I., Surface Reclamation of the 1998 Draft Supplemental Environmental Impact Statement for Oil and Gas Leasing Development (pages I-1 through I-8) for specific reclamation goals, timelines, measuring methods, and monitoring methods. These guidelines will be followed in completing the reclamation of well pads, access roads and pipeline corridors.
5. Appendix E, standard mitigation for all GAP wells (Wheeler to Webster Geographic Area Plan 2005) applies to this location.
6. Put production facilities at the north end of the pad.

Notice: Check the lease for stipulations concerning Timing Limitations, No Surface Occupancy,

#### **Site-Specific Mitigation Measures**

**Proposed Well Number: RMV 169-18, RMV 323-18**  
**Lease Number: COC 62160**

**2005 EA Well Number: RWF 412-18, RWF 512-18, RWF 422-18, RWF 13-18,**  
**RWF 313-18, RWF 413-18.**

1. No new surface disturbance is permitted beyond the original construction lines.
2. The paint color to be used on all surface facilities is Desert Tan (10YR 6/3).
3. The recommended seed mix for this well is the Salt Desert Scrub mix.
4. Plans for Reclamation of the Surface: Refer to Appendix I., Surface Reclamation of the 1998 Draft Supplemental Environmental Impact Statement for Oil and Gas Leasing Development (pages I-1 through I-8) for specific reclamation goals, timelines, measuring methods, and monitoring methods. These guidelines will be followed in completing the reclamation of well pads, access roads and pipeline corridors.
5. Appendix E, standard mitigation for all GAP wells (Wheeler to Webster Geographic Area Plan 2005) applies to this location.

Notice: Check the lease for stipulations concerning Timing Limitations, No Surface Occupancy,

Appendix I Comments: Rocky soils. No top soil to save.

Appendix J Comments: Site is in VRM V (needs rehabilitation) area that contains disturbance from old mine and associated facilities. Viewshed of I-70 & KOP 4 (Holms Mesa). 1.5 miles from KOP 1, & 3.0 miles from KOP 4. Screened from I-70 views by terrain. Site is higher in elevation than KOP 4. Will not be noticeable from KOP because of low color and line contrasts, and distance. and set in bowl that is hidden from view. Access road will not be visible. Standard mitigation.

### **Site-Specific Mitigation Measures**

**Proposed Well Number: RWF 12-19, RWF 312-19, RMV 22-19, RWF 322-19.  
Lease Number: COC 62160.**

**2005 EA Well Number: RWF 412-19, RWF 512-19.**

1. No new surface disturbance is permitted beyond the original construction lines.
2. The paint color to be used on all surface facilities is Desert Tan (10YR 6/3).
3. Plans for Reclamation of the Surface: Refer to Appendix I., Surface Reclamation of the 1998 Draft Supplemental Environmental Impact Statement for Oil and Gas Leasing Development (pages I-1 through I-8) for specific reclamation goals, timelines, measuring methods, and monitoring methods. These guidelines will be followed in completing the reclamation of well pads, access roads and pipeline corridors.
4. The recommended seed mix for this well is the Salt Desert Scrub mix.
5. Appendix E, standard mitigation for all GAP wells (Wheeler to Webster Geographic Area Plan 2005) applies to this location.

Notice: Check the lease for stipulations concerning Timing Limitations, No Surface Occupancy,

Appendix I Comments: Good, but rocky slopes

Appendix J Comments: Will comply with VRM II. Viewshed of I-70 & KOP 4. 0.5 miles from KOP 1, & 2.5 miles from KOP 4. Screened from I-70 views by terrain. Site is higher in elevation than KOPs and set in bowl that is hidden from view. Trees left at toe of fill will screen most of fill and break up line and texture. Access road will not be visible. Standard mitigation.

### **Site-Specific Mitigation Measures**

**Proposed Well Number: RWF 24-19, RWF 324-19  
Lease Number: COC 27868.**

**2005 EA Well Number: WF 424-19.**

1. No new surface disturbance is permitted beyond the original construction lines.
2. No drilling, construction or completion activities from January 1 to February 28 to protect big-game winter habitat.
3. The paint color to be used on all surface facilities is Desert Tan (10YR 6/3).
4. The recommended seed mix for this well is the Salt Desert Scrub mix.
5. Plans for Reclamation of the Surface: Refer to Appendix I., Surface Reclamation of the 1998 Draft Supplemental Environmental Impact Statement for Oil and Gas Leasing Development (pages I-1 through I-8) for specific reclamation goals, timelines, measuring methods, and monitoring methods. These guidelines will be followed in completing the reclamation of well pads, access roads and pipeline corridors.
6. Appendix E, standard mitigation for all GAP wells (Wheeler to Webster Geographic Area Plan 2005) applies to this location.

Notice: Check the lease for stipulations concerning Timing Limitations, No Surface Occupancy.

Appendix I Comments: Healthy veg, except grazed.

Appendix J Comments: Will comply with VRM II. Viewshed of I-70 & KOP 4. 0.25 miles from I-70, & 2.5 miles from KOP 4. Screened from I-70 & KOP views by vegetation. Trees left at toe of fill will screen most of fill and break up line and texture. Access road will not be visible. Standard mitigation.

### **Site-Specific Mitigation Measures**

**Proposed Well Number: RMV 63-19.**

**Lease Number: COC 27868.**

**2005 EA Well Number: RMV 343-19, RWF 443-19.**

1. No new surface disturbance is permitted beyond the original construction lines.
2. Additionally, any potential widening of the access road will require a cultural clearance prior to any work because of known artifacts in the area.
3. The recommended seed mix for this well is the Piñon-Juniper/Sage mix. The pounds of pure live seed/ acre is provided in the Standard Surface Use Plan, using the application method in the Standard Mitigation Measures for All GAP Wells.
4. No drilling, construction or completion activities from January 1 to February 28.to protect big-game winter habitat.
5. The paint color to be used on all surface facilities is Desert Tan (10YR 6/3).
6. The recommended seed mix for this well is the Salt Desert Scrub mix.
7. Plans for Reclamation of the Surface: Refer to Appendix I., Surface Reclamation of the 1998 Draft Supplemental Environmental Impact Statement for Oil and Gas Leasing Development (pages I-1 through I-8) for specific reclamation goals, timelines, measuring

methods, and monitoring methods. These guidelines will be followed in completing the reclamation of well pads, access roads and pipeline corridors.

8. Appendix E, standard mitigation for all GAP wells (Wheeler to Webster Geographic Area Plan 2005) applies to this location.

Notice: Check the lease for stipulations concerning Timing Limitations, No Surface Occupancy,

### **Site-Specific Mitigation Measures**

**Proposed Well Number: RMV 144-19, RWF 342-19, RWF 442-19.**

**Lease Number: COC 27868, COC 62160.**

**2005 EA Well Number: RWF 32-19, RWF 332-19, RWF432-19, RWF 532-19.**

1. Use original plats for construction of waterway on the east side of the pad.
2. No new surface disturbance is permitted beyond the original construction lines.
3. The recommended seed mix for this well is the Piñon-Juniper/Sage mix.
4. No drilling, construction or completion activities from January 1 to February 28 to protect big-game winter habitat on lease 27868 pad locations.
5. The paint color to be used on all surface facilities is Desert Tan (10YR 6/3).
6. Plans for Reclamation of the Surface: Refer to Appendix I., Surface Reclamation of the 1998 Draft Supplemental Environmental Impact Statement for Oil and Gas Leasing Development (pages I-1 through I-8) for specific reclamation goals, timelines, measuring methods, and monitoring methods. These guidelines will be followed in completing the reclamation of well pads, access roads and pipeline corridors.
7. Appendix E, standard mitigation for all GAP wells (Wheeler to Webster Geographic Area Plan 2005) applies to this location.

Notice: Check the lease for stipulations concerning Timing Limitations, No Surface Occupancy,

### **Site-Specific Mitigation Measures**

**Proposed Well Number: RMV 6-20.**

**Lease Number: COC 27868.**

**2005 EA Well Number: RWF 421-20, RWF 521-20.**

1. No new surface disturbance is permitted beyond the original construction lines.
2. The recommended seed mix for this well is the Piñon-Juniper/Sage mix.

3. No drilling, construction, or completion activities from January 1 to February 28 to protect big-game winter habitat.
4. The paint color to be used on all surface facilities is Desert Tan (10YR 6/3).
5. Plans for Reclamation of the Surface: Refer to Appendix I., Surface Reclamation of the 1998 Draft Supplemental Environmental Impact Statement for Oil and Gas Leasing Development (pages I-1 through I-8) for specific reclamation goals, timelines, measuring methods, and monitoring methods. These guidelines will be followed in completing the reclamation of well pads, access roads and pipeline corridors.
6. Appendix E, standard mitigation for all GAP wells (Wheeler to Webster Geographic Area Plan 2005) applies to this location.

Notice: Check the lease for stipulations concerning Timing Limitations, No Surface Occupancy,

### **Site-Specific Mitigation Measures**

**Proposed Well Number: RMV 33-20, RWF 334-17, RWF 344-17.  
Lease Number: COC 27867.**

**2005 EA Well Number: RWF 441-20, RWF 521-20.**

#### **LANDFILL WELL.**

1. The Authorized Officer's Representative is Bill Barter, Glenwood Springs Resource Area and can be notified at 907-947-2800. The Authorized Officer or his representative shall be contacted at least 48 hours prior to the anticipated start of construction and at least 48 hours prior to completion of the project.
2. The operator will notify Kraig Kuberry, District Foreman, Garfield County, at 970-625-8601, prior to moving the drilling and completion equipment on site.
3. A minimum of 2 feet of freeboard will be maintained in the reserve pit between the maximum fluid level and the top of the berm. These pits will be designed to exclude surface runoff.
4. All pits, cellars, rat holes, and other bore holes unnecessary for further lease operations, excluding the reserve pit, will be back-filled immediately after the drilling rig is released to conform to surrounding terrain. Pits, cellars, and/or boreholes that remain on location must be fenced as specified for the reserve pit.
5. Noxious weeds, which may be introduced due to soil disturbance and reclamation, will be treated by methods to be approved by the Authorized Officer. The methods may include biological, mechanical, or chemical treatments. Should chemical treatment be requested, the operator must submit a Pesticide Use Proposal to the Authorized Officer 60 day prior to the planned application date.

6. The operator is responsible for maintenance and repair of segments of the road within the landfill lease that are used by the operator. Responsibility for maintenance and repair is limited to drilling, completion, and recompletion operations, water hauling, construction, and reclamation activities and other operational activities involving the use of heavy trucks and equipment on the landfill road. The intent is to ensure that the operator keeps the landfill road at the same level of condition as prior to operations. Maintenance activities such as dust suppression, grading, and the Authorized Officer will initiate mud removal within 24 hours of notification.

7. All heavy truck traffic necessary for drilling and completion operations is prohibited to access the landfill through the west gate. The operator is authorized to use the access gate at the northeast corner of the property constructed for drilling activities in 1995. Access is from the Langstaff property. The operator is responsible for security of the new gate at the landfill boundary. Operator will provide signage for crossing traffic at the intersection with landfill cell access road.

8. The operator will notify the Garfield County landfill operator (625-2516) prior to activities that will require after hours operations such as drilling, completion, and recompletion activities.

9. The operator should minimize and limit after hours operations (1700- - 0900) Monday through Friday such as supply deliveries, water hauling, and movement of personnel. The operator is responsible for ensuring that the east entrance gate is not left open after landfill operational hours and there will be no unauthorized dumping of trash, hazardous materials, or other materials within the landfill. Every vehicle must use login/logout sheet at east gate. If a violation (east gate is not locked) occurs by the operator or its contractors, the Authorized Officer can require the immediate posting of security guards by the operator and to be approved for the Authorized Officer. The objective of the security guard is to provide objective and neutral monitoring to insure that the gate is kept locked after landfill operational hours. The security guard will remain at the entrance throughout the remainder of the operation taking place.

10. All disturbed areas not necessary for drilling and producing operations (including final abandonment) will undergo the following reclamation standards after completing dirtwork and operations. Specifically, if the well is a producer, the surface area of the drill pad is not needed for facilities or operations will be reclaimed to the standards below within 90 days after completion operations. Also, the entire access road and well pad will be reclaimed if the well is not a producer.

11. The Salt Desert/ Shrub seed mix will be used on all surface disturbances.

12. The operator shall notify the Authorized Officer 24 hours prior to seeding and shall provide the evidence of certification of the above seed mix to the Authorized Officer.

13. All compacted portions of the pad and road will be ripped to a depth of 18 inches unless in solid rock. Prior to seeding, stockpiles topsoil will be spread to a uniform depth. All unused disturbed area will be seeded within 24 hours after completing dirt work unless a change is requested by the operator and approved by the Authorized Officer. If the seedbed has begun to crust over the seed bed must be prepared by disking or some other mechanical means sufficient to allow penetration of the seed into the soil. In addition, the broadcast seed should be covered by using a harrow, dragbar or chain.
14. Plans for Reclamation of the Surface: Refer to Appendix I., Surface Reclamation of the 1998 Draft Supplemental Environmental Impact Statement for Oil and Gas Leasing Development (pages I-1 through I-8) for specific reclamation goals, timelines, measuring methods, and monitoring methods. These guidelines will be followed in completing the reclamation of well pads, access roads and pipeline corridors.
15. The unused disturbed areas surrounding the well location and along the road will be recontoured to blend as nearly as possible with the natural topography. Final grading of back-filled and cut slopes will be done to prevent erosion and encourage establishment of vegetation.
16. If it is determined by the Authorized Officer that the above reclamation standards are not being met, the operator will be required to submit a plan to correct the problem. Approval of the plan may require special reclamation practices such as mulching, the method and time of planting, the use of different plant species, soil analysis, fertilizing, seedbed preparation, contour furrowing, watering, terracing, water barring, and the replacement of topsoil.
17. The buried pipeline will be identified on the surface with markers every 200 feet. The markers will be maintained or replaced as needed. Prior to the abandonment of the pipeline, the operator will meet with the Authorized Officer and the landfill operator to determine if the buried pipeline is a safety problem to existing or future landfill operations. If it is determined by the Authorized Officer, the pipeline will be removed.
18. Compaction and construction of the berms surrounding the tank batteries will be designed to prevent lateral movement of fluids through the utilized materials, prior to storage of fluids. The berms must be constructed to contain at a minimum 110 percent of the storage capacity of the largest tank within the berm. All loading lines will be placed inside the berm.
19. Appendix E, standard mitigation for all GAP wells (Wheeler to Webster Geographic Area Plan 2005) applies to this location.
20. The county personnel will inspect the reserve/production pits and other facilities prior to burial and reclamation.
21. Operator will provide the county with any chemical data on production waters from on-site wells.

Specifically:

Anions:

Carbonate  
Bicarbonate  
Chloride  
Sulfate

Cations:

Calcium (dissolved)  
Magnesium (dissolved)  
Potassium (dissolved)  
Sodium (dissolved)

Miscellaneous:

PH  
Total dissolved solids  
Nitrate (as Nitrogen, dissolved)  
Volatile Organics – EPA 8260

Miscellaneous:

PH  
Total dissolved solids  
Nitrate (as Nitrogen, dissolved)  
Volatile Organics – EPA 8260

Notice: Check the lease for stipulations concerning Timing Limitations, No Surface Occupancy,

**Site-Specific Mitigation Measures**

**Proposed Well Number: RMV 40-20.**

**Lease Number: COC 27868.**

**2005 EA Well Number: RWF 422-20.**

1. No new surface disturbance is permitted beyond the original construction lines.
2. The recommended seed mix for this well is the Salt Desert/Scrub mix.
3. No drilling, construction, or completion activities from January 1 to February 28 to protect big-game winter habitat.
4. The paint color to be used on all surface facilities is Desert Tan (10YR 6/3).
5. Plans for Reclamation of the Surface: Refer to Appendix I., Surface Reclamation of the 1998 Draft Supplemental Environmental Impact Statement for Oil and Gas Leasing

Development (pages I-1 through I-8) for specific reclamation goals, timelines, measuring methods, and monitoring methods. These guidelines will be followed in completing the reclamation of well pads, access roads and pipeline corridors.

6. Appendix E, standard mitigation for all GAP wells (Wheeler to Webster Geographic Area Plan 2005) applies to this location.

7. Put production facilities on north end of the pad.

Notice: Check the lease for stipulations concerning Timing Limitations, No Surface Occupancy,

### **Site-Specific Mitigation Measures**

**Proposed Well Number: RMV 58-20.**

**Lease Number: COC 27867.**

**2005 EA Well Number: RWF 431-20, RWF 531-20**

#### **LANDFILL WELL**

1. The Authorized Officer's Representative is Bill Barter, Glenwood Springs Resource Area and can be notified at 907-947-2800. The Authorized Officer or his representative shall be contacted at least 48 hours prior to the anticipated start of construction and at least 48 hours prior to completion of the project.
2. The operator will notify Kraig Kuberry, District Foreman, Garfield County, at 970-625-8601, prior to moving the drilling and completion equipment on site.
3. A minimum of 2 feet of freeboard will be maintained in the reserve pit between the maximum fluid level and the top of the berm. These pits will be designed to exclude surface runoff.
4. All pits, cellars, rat holes, and other bore holes unnecessary for further lease operations, excluding the reserve pit, will be back-filled immediately after the drilling rig is released to conform to surrounding terrain. Pits, cellars, and/or boreholes that remain on location must be fenced as specified for the reserve pit.
5. Noxious weeds, which may be introduced due to soil disturbance and reclamation, will be treated by methods to be approved by the Authorized Officer. The methods may include biological, mechanical, or chemical treatments. Should chemical treatment be requested, the operator must submit a Pesticide Use Proposal to the Authorized Officer 60 day prior to the planned application date.
6. The operator is responsible for maintenance and repair of segments of the road within the landfill lease that are used by the operator. Responsibility for maintenance and repair is limited to drilling, completion, and recompletion operations, water hauling,

construction, and reclamation activities and other operational activities involving the use of heavy trucks and equipment on the landfill road. The intent is to ensure that the operator keeps the landfill road at the same level of condition as prior to operations. Maintenance activities such as dust suppression, grading, and the Authorized Officer will initiate mud removal within 24 hours of notification.

7. All heavy truck traffic necessary for drilling and completion operations is prohibited to access the landfill through the west gate. The operator is authorized to use the access gate at the northeast corner of the property constructed for drilling activities in 1995. Access is from the Langstaff property. The operator is responsible for security of the new gate at the landfill boundary. Operator will provide signage for crossing traffic an the intersection with landfill cell access road.

8. The operator will notify the Garfield County landfill operator (625-2516) prior to activities that will require after hours operations such as drilling, completion, and recompletion activities.

9. The operator should minimize and limit after hours operations (1700- - 0900) Monday through Friday such as supply deliveries, water hauling, and movement of personnel. The operator is responsible for ensuring that the east entrance gate in not left open after landfill operational hours and there will be no unauthorized dumping of trash, hazardous materials, or other materials within the landfill. Every vehicle must use login/logout sheet at east gate. If a violation (east gate is not locked) occurs by the operator or its contractors, the Authorized Officer can require the immediate posting of security guards by the operator and to be approved for the Authorized Officer. The objective of the security guard is to provide objective and neutral monitoring to insure that the gate is kept locked after landfill operational hours. The security guard will remain at the entrance throughout the remainder of the operation taking place.

10. All disturbed areas not necessary for drilling and producing operations (including final abandonment) will undergo the following reclamation standards after completing dirtwork and operations. Specifically, if the well is as producer, the surface area of the drill pad is not needed for facilities or operations will be reclaimed to the standards below within 90 days after completion operations. Also, the entire access road and well pad will be reclaimed if the well is not a producer.

11. The Salt Desert/ Shrub seed mix will be used on all surface disturbances.

12. The operator shall notify the Authorized Officer 24 hours prior to seeding and shall provide the evidence of certification of the above seed mix to the Authorized Officer.

13. All compacted portions of the pad and road will be ripped to a depth of 18 inches unless in solid rock. Prior to seeding, stockpiles topsoil will be spread to a uniform depth. All unused disturbed area will be seeded within 24 hours after completing dirt work unless a change is requested by the operator and approved by the Authorized Officer. If the seedbed has begun to crust over the seed bed must be prepared by disking

or some other mechanical means sufficient to allow penetration of the seed into the soil. In addition, the broadcast seed should be covered by using a harrow, dragbar or chain.

14. Plans for Reclamation of the Surface: Refer to Appendix I., Surface Reclamation of the 1998 Draft Supplemental Environmental Impact Statement for Oil and Gas Leasing Development (pages I-1 through I-8) for specific reclamation goals, timelines, measuring methods, and monitoring methods. These guidelines will be followed in completing the reclamation of well pads, access roads and pipeline corridors.

15. The unused disturbed areas surrounding the well location and along the road will be recontoured to blend as nearly as possible with the natural topography. Final grading of back-filled and cut slopes will be done to prevent erosion and encourage establishment of vegetation.

16. If it is determined by the Authorized Officer that the above reclamation standards are not being met, the operator will be required to submit a plan to correct the problem. Approval of the plan may require special reclamation practices such as mulching, the method and time of planting, the use of different plant species, soil analysis, fertilizing, seedbed preparation, contour furrowing, watering, terracing, water barring, and the replacement of topsoil.

17. The buried pipeline will be identified on the surface with markers every 200 feet. The markers will be maintained or replaced as needed. Prior to the abandonment of the pipeline, the operator will meet with the Authorized Officer and the landfill operator to determine if the buried pipeline is a safety problem to existing or future landfill operations. If it is determined by the Authorized Officer, the pipeline will be removed.

18. Compaction and construction of the berms surrounding the tank batteries will be designed to prevent lateral movement of fluids through the utilized materials, prior to storage of fluids. The berms must be constructed to contain at a minimum 110 percent of the storage capacity of the largest tank within the berm. All loading lines will be placed inside the berm.

19. Appendix E, standard mitigation for all GAP wells (Wheeler to Webster Geographic Area Plan 2005) applies to this location.

20. The county personnel will inspect the reserve/production pits and other facilities prior to burial and reclamation.

21. Put production facilities on north end of pad.

22. Operator will provide the county with any chemical data on production waters from on-site wells.

Specifically:

Anions:

Carbonate

Bicarbonate  
Chloride  
Sulfate

Cations:

Calcium (dissolved)  
Magnesium (dissolved)  
Potassium (dissolved)  
Sodium (dissolved)

Miscellaneous:

PH  
Total dissolved solids  
Nitrate (as Nitrogen, dissolved)  
Volatile Organics – EPA 8260

Miscellaneous:

PH  
Total dissolved solids  
Nitrate (as Nitrogen, dissolved)  
Volatile Organics – EPA 8260

Notice: Check the lease for stipulations concerning Timing Limitations, No Surface Occupancy,

**Site-Specific Mitigation Measures  
Existing well number RMV 56-21**

**Lease Number COC26867.**

**2005 EA well numbers. RWF 311-21,RWF411-21,RWF321-21, RWF 421-21.**

1. No new surface disturbance is permitted beyond the original construction lines.
2. The recommended seed mix for this well is the Salt Desert/Scrub mix.
3. No drilling, construction, or completion activities from January 1 to February 28 to protect big-game winter habitat..
4. The paint color to be used on all surface facilities is Desert Tan (10YR 6/3).
5. Plans for Reclamation of the Surface: Refer to Appendix I., Surface Reclamation of the 1998 Draft Supplemental Environmental Impact Statement for Oil and Gas Leasing Development (pages I-1 through I-8) for specific reclamation goals, timelines, measuring methods, and monitoring methods. These guidelines will be followed in completing the reclamation of well pads, access roads and pipeline corridors.

6. Appendix E, standard mitigation for all GAP wells (Wheeler to Webster Geographic Area Plan 2005) applies to this location.
  7. Put production facilities on north end of the pad.
- Notice: Check the lease for stipulations concerning Timing Limitations, No Surface Occupancy,

### **Site-Specific Mitigation Measures**

**Proposed Well Number:** PA 41-20, PA 341-20, PA 32-20, PA 332-20, PA 42-20, PA 342-20.

**Existing Surface Location:** DOE 2-W-20.  
**Lease Number:** COC 62161

**2005 EA Well Number:** PA 441-20, PA541-20, PA442-40.

1. No new surface disturbance is permitted beyond the original construction lines.
2. The recommended seed mix for this well is the Piñon-Juniper/Sage mix with an additional 0.5 lbs/acre each of mountain mahogany and Utah serviceberry.
3. The paint color to be used on all surface facilities is Desert Tan (10YR 6/3).
4. Plans for Reclamation of the Surface: Refer to Appendix I., Surface Reclamation of the 1998 Draft Supplemental Environmental Impact Statement for Oil and Gas Leasing Development (pages I-1 through I-8) for specific reclamation goals, timelines, measuring methods, and monitoring methods. These guidelines will be followed in completing the reclamation of well pads, access roads and pipeline corridors.
5. Appendix E, standard mitigation for all GAP wells (Wheeler to Webster Geographic Area Plan 2005) applies to this location.

Notice: Check the lease for stipulations concerning Timing Limitations, No Surface Occupancy,

Appendix I Comments: Little topsoil on disturbed areas. Undisturbed areas will provide good topsoil Add 0.5 lbs./acre each of mountain mahogany and Utah serviceberry to seed mix.

Appendix J Comments: Little topsoil on disturbed areas. Undisturbed areas will provide good Topsoil Add 0.5 lbs./acre each of mountain mahogany and Utah serviceberry to seed mix.

### **Site-Specific Mitigation Measures**

**Proposed Well Number:** PA 24-21, PA 13-21, PA 14-21, PA 314-21, PA 324-21, PA 324-21, PA 424-21, PA 524-21.

**Existing Surface Location: DOE 1-W-21.  
Lease Number: COC 62161.**

**2005 EA Well Number: PA 313-21, PA 413-21, PA 513-21.**

1. No new surface disturbance is permitted beyond the original construction lines.
2. The recommended seed mix for this well is the Salt Desert Scrub mix.
3. The paint color to be used on all surface facilities is Desert Tan (10YR 6/3).
4. Plans for Reclamation of the Surface: Refer to Appendix I., Surface Reclamation of the 1998 Draft Supplemental Environmental Impact Statement for Oil and Gas Leasing Development (pages I-1 through I-8) for specific reclamation goals, timelines, measuring methods, and monitoring methods. These guidelines will be followed in completing the reclamation of well pads, access roads and pipeline corridors.
5. Appendix E, standard mitigation for all GAP wells (Wheeler to Webster Geographic Area Plan 2005) applies to this location.

Notice: Check the lease for stipulations concerning Timing Limitations, No Surface Occupancy,

Appendix I Comments: No Comments.

Appendix J Comments: Will comply with VRM II. New wells added to existing pad. Set back 2 miles from KOP 1 in Cottonwood Gulch. Screened by vegetation, terrain and distance. Pad will not be visible from any KOP. Standard mitigation

#### **Site-Specific Mitigation Measures.**

**Proposed Well Number: PA 22-26, PA 322-26, PA 21-26.**

**Existing Surface Location: DOE 1-W-26.  
Lease Number: COC 62161.**

2005 EA Well Number: PA422-26, PA 522-26.

1. No new surface disturbance is permitted beyond the original construction lines.
2. The recommended seed mix for this well is the Piñon-Juniper/Sage mix.
3. Follow site-specific reclamation measures in Appendix I of EA.
4. The paint color to be used on all surface facilities is Desert Tan (10YR 6/3).
5. Plans for Reclamation of the Surface: Refer to Appendix I., Surface Reclamation of the 1998 Draft Supplemental Environmental Impact Statement for Oil and Gas Leasing Development (pages I-1 through I-8) for specific reclamation goals, timelines, measuring methods, and monitoring methods. These guidelines will be followed in completing the reclamation of well pads, access roads and pipeline corridors.

6. Appendix E, standard mitigation for all GAP wells (Wheeler to Webster Geographic Area Plan 2005) applies to this location.

Notice: Check the lease for stipulations concerning Timing Limitations, No Surface Occupancy,

Appendix I Comments: Little existing top soil.

Appendix J Comments: Will comply with VRM II. New wells added to existing pad. Within viewshed of I-70 & KOP 3 (Morrisania Mesa). Approx. 1 mile from I-70, & 2.5 miles from KOP 2. Not visible from highway because pad is higher in elevation. Screened by vegetation, terrain and distance. Sparsely vegetated with Shrub/rabbitbrush/sage. However, Will comply with VRM II. New wells added to existing pad. Within viewshed of I-70 & KOP 3 (Morrisania Mesa). approx. 1 mile from I-70, & 2.5 miles from KOP 2. Not visible from highway because pad is higher in elevation. Screened by vegetation, terrain and distance. Sparsely vegetated with shrub/rabbitbrush/sage. However, existing cuts/fills very large and visible, though difficult to discern, from KOP 3 Existing cut/fill slopes will be improved in appearance by roughing up texture and revegetating with 'pockets' created for natural effect. Cut will be backdropped by sparsely vegetated steep slopes - low contrast. Once revegetated, pad will not be noticeable from any KOP.

### **Site-Specific Mitigation Measures**

**Proposed Well Number: PA 13-27, PA 313-27.**  
**Lease Number: COC 62161.**

**2005 EA Well Number: PA 412-27, PA 512-27.**

1. No new surface disturbance is permitted beyond the original construction lines.
2. The recommended seed mix for this well is the Piñon-Juniper/Sage mix
3. The paint color to be used on all surface facilities is Desert Tan (10YR 6/3).
4. Plans for Reclamation of the Surface: Refer to Appendix I., Surface Reclamation of the 1998 Draft Supplemental Environmental Impact Statement for Oil and Gas Leasing Development (pages I-1 through I-8) for specific reclamation goals, timelines, measuring methods, and monitoring methods. These guidelines will be followed in completing the reclamation of well pads, access roads and pipeline corridors.
5. Appendix E, standard mitigation for all GAP wells (Wheeler to Webster Geographic Area Plan 2005) applies to this location.

Notice: Check the lease for stipulations concerning Timing Limitations, No Surface Occupancy,

Appendix I Comments: Vegetation desirable and cover is good.

Appendix J Comments: Will comply with VRM II. Existing disturbance from road & pipeline. Viewshed of KOP 3 (Morrisania Mesa). More than 2 miles from KOP. Sparse to moderately dense p/j. Cuts will be backdropped by steep, sparsely vegetated slopes. Once it is revegetated, it will not be noticeable because of distance & presence of natural clearings. Access road mostly along contour, with sections screened by trees. Standard mitigation

### **Site-Specific Mitigation Measures**

**Proposed Well Number: PA 22-27, PA 322-27, PA 12-27, PA 312-27.**  
**Existing Well Number: DOE 1-W-27.**  
**Lease Number: COC 62161.**

**2005 EA Well Number: PA422-27, PA522-27.**

1. No new surface disturbance is permitted beyond the original construction lines.
2. The recommended seed mix for this well is the Piñon-Juniper/Sage mix.
3. The paint color to be used on all surface facilities is Desert Tan (10YR 6/3).
4. Plans for Reclamation of the Surface: Refer to Appendix I., Surface Reclamation of the 1998 Draft Supplemental Environmental Impact Statement for Oil and Gas Leasing Development (pages I-1 through I-8) for specific reclamation goals, timelines, measuring methods, and monitoring methods. These guidelines will be followed in completing the reclamation of well pads, access roads and pipeline corridors.
5. Appendix E, standard mitigation for all GAP wells (Wheeler to Webster Geographic Area Plan 2005) applies to this location.

Notice: Check the lease for stipulations concerning Timing Limitations, No Surface Occupancy,

Appendix I Comments: No Comments.

Appendix J Comments: Will comply with VRM II. New wells will be installed on existing pad. New cut/fill will be less steep & revegetated, resulting in a more natural appearance than existing cut/fill. Backdropped by sparsely vegetated slopes. Standard mitigation.

### **Site-Specific Mitigation Measures**

**Proposed Well Number: PA 42-27, PA 342-27, PA 32-27.**  
**Existing Well Number: DOE 2-W-27.**  
**Lease Number: COC 62161.**

**2005 EA Well Number: PA41-27, PA341-27.**

1. No new surface disturbance is permitted beyond the original construction lines.
2. The recommended seed mix for this well is the Salt Desert Scrub mix. The pounds of pure live seed/ acre is provided in the Standard Surface Use Plan; broadcast sagebrush and galleta using the application method in the Standard Mitigation Measures for All GAP Wells.
3. The paint color to be used on all surface facilities is Desert Tan (10YR 6/3).
4. Plans for Reclamation of the Surface: Refer to Appendix I., Surface Reclamation of the 1998 Draft Supplemental Environmental Impact Statement for Oil and Gas Leasing Development (pages I-1 through I-8) for specific reclamation goals, timelines, measuring methods, and monitoring methods. These guidelines will be followed in completing the reclamation of well pads, access roads and pipeline corridors.
5. Appendix E, standard mitigation for all GAP wells (Wheeler to Webster Geographic Area Plan 2005) applies to this location.

Notice: Check the lease for stipulations concerning Timing Limitations, No Surface Occupancy,

Appendix I Comments: Little existing topsoil.

Appendix J Comments: Will comply with NSO and VRM II. New wells added to existing pad. Within viewshed of KOPs 1 & 3 (Morrisania Mesa). Approx. 1 mile from I-70, & 2.5 miles from KOP 3. Not visible from highway because pad is higher in elevation. Difficult to see from KOP 3 because of distance. Pad will be expanded, but will be similar in appearance to existing pad. Slopes backdropping cut are sparsely vegetated steep slopes. Site is sparsely vegetated. Color contrasts will be low, so that expanded pad will not be noticeable from the KOP. standard mitigation.

**Site-Specific Mitigation Measures**

**Proposed Well Number: PA 44-27, PA 344-27.**

**Lease Number: COC 62161.**

**2005 EA Well Number: PA 444-27, PA 544-27.**

1. No new surface disturbance is permitted beyond the original construction lines.
2. The recommended seed mix for this well is the Piñon-Juniper/Sage mix
3. The paint color to be used on all surface facilities is Desert Tan (10YR 6/3).
4. Plans for Reclamation of the Surface: Refer to Appendix I., Surface Reclamation of the 1998 Draft Supplemental Environmental Impact Statement for Oil and Gas Leasing Development (pages I-1 through I-8) for specific reclamation goals, timelines, measuring methods, and monitoring methods. These guidelines will be followed in completing the reclamation of well pads, access roads and pipeline corridors.

5. Appendix E, standard mitigation for all GAP wells (Wheeler to Webster Geographic Area Plan 2005) applies to this location.

Notice: Check the lease for stipulations concerning Timing Limitations, No Surface Occupancy,

Appendix I Comments: Little veg and topsoil.

Appendix J Comments: Will comply with VRM II. NSO doesn't apply as slopes < 30%. Viewshed of KOP 3 (Morrissania Mesa), but 2 miles from KOP. Ridge to NW & NE of site obscures views from I-70. Pad will blend With bare soils of slopes below pad. Will not be noticeable once its revegetated. Standard mitigation.

### **Site-Specific Mitigation Measures**

**Proposed Well Number: PA 11-28, PA 311-28.**

**Lease Number: COC 62161.**

**2005 EA Well Number: PA 411-28, PA 511-28, PA 414-21, PA 514-21.**

1. No new surface disturbance is permitted beyond the original construction lines.
2. The recommended seed mix for this well is the Piñon-Juniper/Sage mix.
3. The paint color to be used on all surface facilities is Desert Tan (10YR 6/3).
4. Plans for Reclamation of the Surface: Refer to Appendix I., Surface Reclamation of the 1998 Draft Supplemental Environmental Impact Statement for Oil and Gas Leasing Development (pages I-1 through I-8) for specific reclamation goals, timelines, measuring methods, and monitoring methods. These guidelines will be followed in completing the reclamation of well pads, access roads and pipeline corridors.
5. Appendix E, standard mitigation for all GAP wells (Wheeler to Webster Geographic Area Plan 2005) applies to this location.

Notice: Check the lease for stipulations concerning Timing Limitations, No Surface Occupancy,

Appendix I Comments: Heavy cheat.

Appendix J Comments: Will comply with VRM II with additional mitigation. Viewshed of I-70 & KOPs 2 & 3. Screened from I-70 & KOP 2 by terrain About 2.5 miles from KOP3. Exposed ridge facing KOP 3. Existing vegetation is sparse, and color, line and textural contrast of pad/vegetation interface will not be strong, however, the site is very exposed on the ridge. Standard mitigation & additional mitigation - pad & fill area should be irregular in shape, and facilities located towards the back of the pad.

### **Site-Specific Mitigation Measures**

**Proposed Well Number: PA 12-28, PA 312-28, PA 313-28.**  
**Lease Number: COC 62161.**

**2005 EA Well Number: PA 412-28, PA 512-28, PA 412-28, PA 613-28**

1. No surface disturbance is permitted beyond the original construction lines.
2. The recommended seed mix for this well is the Piñon-Juniper/
3. The paint color to be used on all surface facilities is Desert Tan (10YR 6/3).
4. Plans for Reclamation of the Surface: Refer to Appendix I., Surface Reclamation of the 1998 Draft Supplemental Environmental Impact Statement for Oil and Gas Leasing Development (pages I-1 through I-8) for specific reclamation goals, timelines, measuring methods, and monitoring methods. These guidelines will be followed in completing the reclamation of well pads, access roads and pipeline corridors.
5. Appendix E, standard mitigation for all GAP wells (Wheeler to Webster Geographic Area Plan 2005) applies to this location.

Notice: Check the lease for stipulations concerning Timing Limitations, No Surface Occupancy,

Appendix I Comments: Cheat is heavy.

Appendix J Comments: Will comply with VRM II. Viewshed of KOPs 1, 2, & 3. Moderate p/j. East side of site has large, open area. Flat, open site - trees on south side will screen pad and break linear contrasts.

### **Site-Specific Mitigation Measures**

**Proposed Well Number: PA 14-28, PA 314-28, PA 13-28, PA 344-28.**  
**Lease Number: COC 62161.**

**2005 EA Well Number: PA 414-28, PA 514-28.**

1. No surface disturbance is permitted beyond the original construction lines.
2. The recommended seed mix for this well is the Piñon-Juniper/Sage mix.
3. The paint color to be used on all surface facilities is Desert Tan (10YR 6/3).
4. Plans for Reclamation of the Surface: Refer to Appendix I., Surface Reclamation of the 1998 Draft Supplemental Environmental Impact Statement for Oil and Gas Leasing Development (pages I-1 through I-8) for specific reclamation goals, timelines, measuring methods, and monitoring methods. These guidelines will be followed in completing the reclamation of well pads, access roads and pipeline corridors.

5. Appendix E, standard mitigation for all GAP wells (Wheeler to Webster Geographic Area Plan 2005) applies to this location.

Notice: Check the lease for stipulations concerning Timing Limitations, No Surface Occupancy,

Appendix I Comments: No Comments.

Appendix J Comments: Will comply with VRM II with additional mitigation. Viewshed of I-70 & KOPs 2 & 3. Screened from I-70 & KOP 2 by terrain About 2.5 miles from KOP3. Existing vegetation is sparse, and color, line and textural contrast of pad/vegetation interface will not be strong, however, the site is very exposed on the ridge

### **Site-Specific Mitigation Measures**

**Proposed Well Number: PA 32-28, DOE 1-W-28.**

**Lease Number: COC 62161.**

**2005 EA Well Number: PA 332-28, PA 432-28, PA532-28, PA 42-28, PA 342-28, PA 43-28.**

1. No new surface disturbance is permitted beyond the original construction lines.
2. The recommended seed mix for this well is the Piñon-Juniper/Sage mix.
3. The paint color to be used on all surface facilities is Desert Tan (10YR 6/3).
4. Plans for Reclamation of the Surface: Refer to Appendix I., Surface Reclamation of the 1998 Draft Supplemental Environmental Impact Statement for Oil and Gas Leasing Development (pages I-1 through I-8) for specific reclamation goals, timelines, measuring methods, and monitoring methods. These guidelines will be followed in completing the reclamation of well pads, access roads and pipeline corridors.
5. Appendix E, standard mitigation for all GAP wells (Wheeler to Webster Geographic Area Plan 2005) applies to this location.

Notice: Check the lease for stipulations concerning Timing Limitations, No Surface Occupancy,

### **Site-Specific Mitigation Measures**

**Proposed Well Number: PA 33-28, PA 333-28.**

**Lease Number: COC 62161.**

**2005 EA Well Number: PA 433-28, PA 533-28, PA 633-28.**

1. No surface disturbance is permitted beyond the original construction lines.
2. Construct silt fence on creek side.
3. The recommended seed mix for this well is the Salt Desert Scrub mix
4. The paint color to be used on all surface facilities is Desert Tan (10YR 6/3).
5. Plans for Reclamation of the Surface: Refer to Appendix I., Surface Reclamation of the 1998 Draft Supplemental Environmental Impact Statement for Oil and Gas Leasing Development (pages I-1 through I-8) for specific reclamation goals, timelines, measuring methods, and monitoring methods. These guidelines will be followed in completing the reclamation of well pads, access roads and pipeline corridors.
6. Appendix E, standard mitigation for all GAP wells (Wheeler to Webster Geographic Area Plan 2005) applies to this location.

Notice: Check the lease for stipulations concerning Timing Limitations, No Surface Occupancy,

Appendix I Comments: Heavy cheat.

Appendix J Comments: Will comply with VRM II. Within viewshed of I-70 & KOPs 2 & Between 1 - 2.5 miles from KOPs. Screened from I-70 & KOP 2 by terrain. Pad is slightly lower in elevation than KOP 3, but is 2.5 miles from KOP. Vegetated with shrub/greasewood. Color, form and line contrast difficult to discern at 2.5 miles. Once site has been revegetated, will not be noticeable. Standard mitigation.

### **Site-Specific Mitigation Measures**

**Proposed Well Number: DOE 2-M-29, DOE 3-W-29, PA 14-29, PA 23-29.  
Lease Number: COC 62162.**

**2005 EA Well Number: PA 314-29, PA 414-29, PA 514-29, PA 323-29, PA 324-29,  
PA 424-29.**

1. No new surface disturbance is permitted beyond the original construction lines.
2. The recommended seed mix for this well is the Piñon-Juniper/Sage mix.
3. The paint color to be used on all surface facilities is Desert Tan (10YR 6/3).
4. Plans for Reclamation of the Surface: Refer to Appendix I., Surface Reclamation of the 1998 Draft Supplemental Environmental Impact Statement for Oil and Gas Leasing Development (pages I-1 through I-8) for specific reclamation goals, timelines, measuring methods, and monitoring methods. These guidelines will be followed in completing the reclamation of well pads, access roads and pipeline corridors.
5. Appendix E, standard mitigation for all GAP wells (Wheeler to Webster Geographic Area Plan 2005) applies to this location.

Notice: Check the lease for stipulations concerning Timing Limitations, No Surface Occupancy,

## Site-Specific Mitigation Measures

### Site-Specific Mitigation Measures

**Proposed Well Number: PA 31-29, PA 331-29.**

**Existing Well Number: DOE 2-W-29.**

**Lease Number: COC 62162.**

**2005 EA Well Number: PA22-29, PA322-29, PA422-29, PA522-29, PA21-29, PA 321-29, PA431-29.**

1. No surface disturbance is permitted beyond the original construction lines.
2. The recommended seed mix for this well is the Salt Desert Scrub mix
3. The paint color to be used on all surface facilities is Desert Tan (10YR 6/3).
4. Plans for Reclamation of the Surface: Refer to Appendix I., Surface Reclamation of the 1998 Draft Supplemental Environmental Impact Statement for Oil and Gas Leasing Development (pages I-1 through I-8) for specific reclamation goals, timelines, measuring methods, and monitoring methods. These guidelines will be followed in completing the reclamation of well pads, access roads and pipeline corridors.
5. Appendix E, standard mitigation for all GAP wells (Wheeler to Webster Geographic Area Plan 2005) applies to this location.

Notice: Check the lease for stipulations concerning Timing Limitations, No Surface Occupancy,

Appendix I Comments: Existing reclamation good, except “turn around.

Appendix J Comments: Will comply with NSO and VRM II. Within viewsheds of I-70 & KOP 2, but higher in elevation and not visible. 1.5 miles from I-70 and 2.5 miles from KOP 2. New wells will be installed on existing pad. Will be similar in appearance to existing pad. Once pad is revegetated, site will not be noticeable. Standard mitigation.

### Site-Specific Mitigation Measures

**Proposed Well Number: PA 34-29, PA 334-29.**

**Lease Number: COC 62162.**

**2005 EA Well Number: PA434-29, PA534-29.**

1. No surface disturbance is permitted beyond the original construction lines
2. An infestation of Russian knapweed at the proposed pad location (along the existing road) shall be eradicated prior to construction. This site shall be monitored regularly

during the production phase to ensure this noxious weed has been eradicated. Additional action shall be taken to eradicate this species if it reappears after construction.

3. The recommended seed mix for this well is the Piñon-Juniper/Sage mix
4. The paint color to be used on all surface facilities is Desert Tan (10YR 6/3).
5. Plans for Reclamation of the Surface: Refer to Appendix I., Surface Reclamation of the 1998 Draft Supplemental Environmental Impact Statement for Oil and Gas Leasing Development (pages I-1 through I-8) for specific reclamation goals, timelines, measuring methods, and monitoring methods. These guidelines will be followed in completing the reclamation of well pads, access roads and pipeline corridors.
6. Appendix E, standard mitigation for all GAP wells (Wheeler to Webster Geographic Area Plan 2005) applies to this location.

Notice: Check the lease for stipulations concerning Timing Limitations, No Surface Occupancy,

Appendix I Comments: No Comments.

Appendix J Comments: Will comply with VRM II.. Within viewshed of I-70. Pad is higher in elevation and > 1mile from KOP. Once cut & fill have been revegetated, will not be noticeable. Standard mitigation.

### **Site-Specific Mitigation Measures**

**Proposed Well Number: PA 44-29, PA 343-29, PA 33-29.**

**Existing Well Number: DOE 1-M-29, DOE 1-W-29.**

**Lease Number: COC 62162.**

**2005 EA Well Number: PA 513-28, PA 533-29.**

1. No surface disturbance is permitted beyond the original construction lines.
2. The recommended seed mix for this well is the Salt Desert Scrub mix. Broadcast sagebrush and galleta.
3. The paint color to be used on all surface facilities is Desert Tan (10YR 6/3).
4. Plans for Reclamation of the Surface: Refer to Appendix I., Surface Reclamation of the 1998 Draft Supplemental Environmental Impact Statement for Oil and Gas Leasing Development (pages I-1 through I-8) for specific reclamation goals, timelines, measuring methods, and monitoring methods. These guidelines will be followed in completing the reclamation of well pads, access roads and pipeline corridors.
5. Appendix E, standard mitigation for all GAP wells (Wheeler to Webster Geographic Area Plan 2005) applies to this location.

Notice: Check the lease for stipulations concerning Timing Limitations, No Surface Occupancy,

Appendix I Comments: High cheat cover.

Appendix J Comments: Will comply with VRM II. Within viewsheds of I-70 & KOP 2, but higher in elevation and not visible. New wells will be installed on existing pad. Will be similar in appearance to existing pad. Once pad is revegetated, will not be noticeable. Standard mitigation.

#### **Site-Specific Mitigation Measures**

**Proposed Well Number: DOE 2-M-36, GM 31-36, GM 41-36, GM 42-36.**

**Lease Number: COC 62163.**

**2005 EA Well Number: GM 331-36, GM 431-36, GM 332-36, GM 432-36, GM 341-36, GM 441-36, GM 541-36, GM 342-36, GM 442-36.**

1. No new surface disturbance is permitted beyond the original construction lines.
2. The paint color to be used on all surface facilities is Desert Tan (10YR 6/3).
3. The recommended seed mix for this well is the Piñon-Juniper/Sage mix. Broadcast sagebrush and galleta.
4. Plans for Reclamation of the Surface: Refer to Appendix I., Surface Reclamation of the 1998 Draft Supplemental Environmental Impact Statement for Oil and Gas Leasing Development (pages I-1 through I-8) for specific reclamation goals, timelines, measuring methods, and monitoring methods. These guidelines will be followed in completing the reclamation of well pads, access roads and pipeline corridors.
5. Appendix E, standard mitigation for all GAP wells (Wheeler to Webster Geographic Area Plan 2005) applies to this location.

Notice: Check the lease for stipulations concerning Timing Limitations, No Surface Occupancy,

#### **Site Specific Mitigation Measures**

**Proposed Well Number: DOE 1-M-31, PA 13-31, PA 23-31.**

**Lease Number: COC 62162.**

**2005 EA Well Number: PA 14-31, PA 514-31.**

1. No surface disturbance is permitted beyond the original construction lines.
2. Locate production facilities so as to not be visible from I-70.
3. The paint color to be used on all surface facilities is Desert Tan (10YR 6/3).
4. The recommended seed mix for this well is the Piñon-Juniper/Sage mix
5. Plans for Reclamation of the Surface: Refer to Appendix I., Surface Reclamation of the 1998 Draft Supplemental Environmental Impact Statement for Oil and Gas Leasing

Development (pages I-1 through I-8) for specific reclamation goals, timelines, measuring methods, and monitoring methods. These guidelines will be followed in completing the reclamation of well pads, access roads and pipeline corridors.

6. Appendix E, standard mitigation for all GAP wells (Wheeler to Webster Geographic Area Plan 2005) applies to this location.

Notice: Check the lease for stipulations concerning Timing Limitations, No Surface Occupancy,

### **Site-Specific Mitigation Measures**

**Proposed Well Number: PA 343-31, PA 33-31, PA 333-31.**

**Existing Well Number: PA 43-31.**

**Lease Number: COC 62162.**

**2005 EA Well Number: PA 443-31, PA 543-31.**

1. The disturbed areas outside of the existing fencing needs a retreatment (fertilizer, top soil, reseed).
2. Round the north corner near drainage so that water does not collect on the pad.
3. Rough up” cut slope and create pocketed areas (increase water retention/shade) for desirable vegetation.
4. Place new facilities as far back as possible on pad to help screen for VRM.
5. The recommended seed mix for this well is the Salt Desert Scrub mix
6. Follow site-specific reclamation measures in Appendix I of EA.
7. The paint color to be used on all surface facilities is Desert Tan (10YR 6/3).
8. Plans for Reclamation of the Surface: Refer to Appendix I., Surface Reclamation of the 1998 Draft Supplemental Environmental Impact Statement for Oil and Gas Leasing Development (pages I-1 through I-8) for specific reclamation goals, timelines, measuring methods, and monitoring methods. These guidelines will be followed in completing the reclamation of well pads, access roads and pipeline corridors.
9. Appendix E, standard mitigation for all GAP wells (Wheeler to Webster Geographic Area Plan 2005) applies to this location.
10. No surface disturbance is permitted beyond the original construction lines.

Notice: Check the lease for stipulations concerning Timing Limitations, No Surface Occupancy,

Appendix I Comments: Fenced area has proven success. Many undesirables.

Appendix J Comments: Will comply with NSO and VRM II. New wells added to existing pad. Within viewshed of KOPs 1 & 2 (Battlement Mesa). Approx. 1 mile from I-70, & 2 miles from KOP 2. Not visible from highway because pad is higher in elevation. Visible from KOP 2. No additional disturbance. Pad will be similar in

appearance to existing pad, so landscape character will not change. Standard mitigation and additional mitigation - place new facilities as far back on pad as possible. Site-Specific Mitigation Measures

### **Site-Specific Mitigation Measures**

**Proposed Well Number: PA 41-31, PA 31-31, PA 331-31, PA 341-31.  
Lease Number: COC 62162.**

**2005 EA Well Number: PA 44-30, PA 344-30, PA 441-31, PA 541-31, PA 431-31, PA 532-31.**

1. Construct 24-inch culvert on access road at entrance to pad.
2. Riprap and culvert on full slopes.
3. Ditch/culvert/engineering: divert flow from north end around west side using 10-foot-wide V ditch; riprap as required by engineer.
4. Divert flow from north end around east. Side using V ditch: riprap as designed.
5. Perform soil test and add soil amendments as needed (fertilizer, etc.).
6. The recommended seed mix for this well is the Salt Desert Scrub mix. Broadcast sagebrush and galleta.
7. Follow site-specific reclamation measures in Appendix I of EA.
8. The paint color to be used on all surface facilities is Desert Tan (10YR 6/3).
9. Plans for Reclamation of the Surface: Refer to Appendix I., Surface Reclamation of the 1998 Draft Supplemental Environmental Impact Statement for Oil and Gas Leasing Development (pages I-1 through I-8) for specific reclamation goals, timelines, measuring methods, and monitoring methods. These guidelines will be followed in completing the reclamation of well pads, access roads and pipeline corridors.
10. Appendix E, standard mitigation for all GAP wells (Wheeler to Webster Geographic Area Plan 2005) applies to this location.
11. No surface disturbance is permitted beyond the original construction lines

Notice: Check the lease for stipulations concerning Timing Limitations, No Surface Occupancy,

Appendix I Comments: Lack of topsoil, need additional measures.

Appendix J Comments: Will comply with NSO & VRM II. Viewshed of KOP 2, however distance from KOP minimizes impact. No visible from I-70. Once cut/fills are revegetated, they will blend with existing sparsely vegetated slopes. Access road screened by trees or on flat terrain in clearings. Standard mitigation.

### **Site-Specific Mitigation Measures**

**Proposed Well Number: PA 32-31, PA 332-31, PA 342-31.**  
**Existing Well Number: PA 42-31.**  
**Lease Number: COC 62162.**

**2005 EA Well Number: PA 432-31, PA 442-31, PA 542-31.**

1. No surface disturbance is permitted beyond the original construction lines.
2. The recommended seed mix for this well is the Salt Desert Scrub mix. Broadcast sagebrush and galleta.
3. Follow site-specific reclamation measures in Appendix I of EA.
4. The paint color to be used on all surface facilities is Desert Tan (10YR 6/3).
5. Plans for Reclamation of the Surface: Refer to Appendix I., Surface Reclamation of the 1998 Draft Supplemental Environmental Impact Statement for Oil and Gas Leasing Development (pages I-1 through I-8) for specific reclamation goals, timelines, measuring methods, and monitoring methods. These guidelines will be followed in completing the reclamation of well pads, access roads and pipeline corridors.
6. Appendix E, standard mitigation for all GAP wells (Wheeler to Webster Geographic Area Plan 2005) applies to this location.
7. Survey the known active raptor nest prior to any construction activity, drilling or completion activity. If the nest is active, no drilling, construction or completion activity will be permitted until the young have fledged.

Notice: Check the lease for stipulations concerning Timing Limitations, No Surface Occupancy,

Appendix I Comments: Little soil, Halogeton.

Appendix J Comments: Will comply with NSO and VRM II. Viewshed of KOPs 1 & 2. Will be visible from I-70, but will be very similar in appearance to existing pad. Existing landscape character will not change. Standard mitigation.

#### **Site-Specific Mitigation Measures**

**Proposed Well Number: PA 312-32.**  
**Existing Surface Location: PA 12-32.**  
**Lease Number: COC 62162.**

**2005 EA Well Number: PA 412-32, PA 512-32.**

1. Water diversion on the north side of the pad will be necessary. During construction the drainage will be plugged with dirt and water rerouted, and after construction the drainage will be constructed at the toe of the cut slope.
2. Use rocks to create riprap on drainage to south and southwest.
3. Create water diversion on cut slope.
4. The recommended seed mix for this well is the Salt Desert Scrub mix. Broadcast

sagebrush and galleta.

5. Follow site-specific reclamation measures in Appendix I of EA.
6. The paint color to be used on all surface facilities is Desert Tan (10YR 6/3).
7. No surface disturbance is permitted beyond the original construction lines.
8. Plans for Reclamation of the Surface: Refer to Appendix I., Surface Reclamation of the 1998 Draft Supplemental Environmental Impact Statement for Oil and Gas Leasing Development (pages I-1 through I-8) for specific reclamation goals, timelines, measuring methods, and monitoring methods. These guidelines will be followed in completing the reclamation of well pads, access roads and pipeline corridors.
9. Appendix E, standard mitigation for all GAP wells (Wheeler to Webster Geographic Area Plan 2005) applies to this location.

Notice: Check the lease for stipulations concerning Timing Limitations, No Surface Occupancy,

Appendix I Comments: Heavily Grazed. Many undesirables.

Appendix J Comments: Will comply with NSO & VRM II. In viewshed of KOPs 1 & 2. 1 Mile from KOP 1 and 2 miles from KOP 2. New wells added to existing pad. Pad will be similar in appearance to existing site, and will be improved with standard mitigation. Standard mitigation.

### **Site-Specific Mitigation Measures**

**Proposed Well Number: PA 11-32, PA 311-32, PA 21-32, PA 321-32.  
Lease Number: COC 62162.**

**2005 EA Well Number: PA 411-32, PA511-32, PA421-32, PA 521-32.**

1. No surface disturbance is permitted beyond the original construction lines.
2. The recommended seed mix for this well is the Salt Desert Scrub mix
3. The paint color to be used on all surface facilities is Desert Tan (10YR 6/3).
4. Plans for Reclamation of the Surface: Refer to Appendix I., Surface Reclamation of the 1998 Draft Supplemental Environmental Impact Statement for Oil and Gas Leasing Development (pages I-1 through I-8) for specific reclamation goals, timelines, measuring methods, and monitoring methods. These guidelines will be followed in completing the reclamation of well pads, access roads and pipeline corridors.
5. Appendix E, standard mitigation for all GAP wells (Wheeler to Webster Geographic Area Plan 2005) applies to this location.

Notice: Check the lease for stipulations concerning Timing Limitations, No Surface Occupancy

Appendix I Comments: No Comments.

Appendix J Comments: Will comply with VRM II. NSO not applicable because slopes <30%. Viewshed of KOPs 1 & 2. Not visible from I-70. About 2 miles from KOP 2. Once it is revegetated, pad will not be noticeable from KOP 2 because of distance and low color contrast of pad with existing shrubs, grasses. Small cuts and fills will not be visible. New access road will be screened by terrain Standard mitigation.

### **Site-Specific Mitigation Measures**

**Proposed Well Number: PA 322-32.**  
**Existing Well Number: PA 22-32.**  
**Lease Number: COC 62162.**

**2005 EA Well Number: PA422-332, PA 522-32.**

1. The recommended seed mix for this well is the Salt Desert Scrub mix
2. Plans for Reclamation of the Surface: Refer to Appendix I., Surface Reclamation of the 1998 Draft Supplemental Environmental Impact Statement for Oil and Gas Leasing Development (pages I-1 through I-8) for specific reclamation goals, timelines, measuring methods, and monitoring methods. These guidelines will be followed in completing the reclamation of well pads, access roads and pipeline corridors.
3. Appendix E, standard mitigation for all GAP wells (Wheeler to Webster Geographic Area Plan 2005) applies to this location.
4. No surface disturbance is permitted beyond the original construction lines.
5. The paint color to be used on all surface facilities is Desert Tan (10YR 6/3).

Notice: Check the lease for stipulations concerning Timing Limitations, No Surface Occupancy

Appendix I Comments: Reclamation to date is establishing.

Appendix J Comments: Will comply with VRM II. In viewshed of KOPs 1 & 2. 1 mile from KOP 1 and 2 miles from KOP 2. New wells added to existing pad. Pad will be similar in appearance to existing site, and will probably be improved with standard mitigation.

### **Specific Mitigation Measures**

**Proposed Well Number: PA 41-32, PA 341-32.**  
**Lease Number: COC 62162.**

**2005 EA Well Number: PA 441-32, PA 541-32.**

1. No surface disturbance is permitted beyond the original construction lines.
2. The recommended seed mix for this well is the Salt Desert Scrub mix. Broadcast sagebrush and galleta.
3. Follow site-specific reclamation measures in Appendix I of EA.
4. Plans for Reclamation of the Surface: Refer to Appendix I., Surface Reclamation of the 1998 Draft Supplemental Environmental Impact Statement for Oil and Gas Leasing Development (pages I-1 through I-8) for specific reclamation goals, timelines, measuring methods, and monitoring methods. These guidelines will be followed in completing the reclamation of well pads, access roads and pipeline corridors.
5. Appendix, standard mitigation for all GAP wells (Wheeler to Webster Geographic Area Plan 2005) applies to this location.
6. The paint color to be used on all surface facilities is Desert Tan (10YR 6/3).

Notice: Check the lease for stipulations concerning Timing Limitations, No Surface Occupancy.

Appendix I Comments: Heavy weed component. Healthy vegetation adjacent to pad.

Appendix J Comments: Will comply with VRM II with additional mitigation. Viewsheds of KOPs 1, 2, & 3. Pad distance from KOPs ranges between 0.5 to 2.5 miles. Will be visible to all three KOPs until facilities are painted to harmonize with surroundings. Pad is sparsely vegetated, but is located on exposed area that would provide views of textural and form contrasts of pad and facilities with surrounding terrain. Standard mitigation and additional mitigation - locate facilities to back of pad to increase viewing distance. Site-Specific Mitigation Measures

### **Site-Specific Mitigation Measures**

**Proposed Well Number: PA 11-33, PA 311-33.**

**Lease Number: COC 62162.**

**2005 EA Well Number: PA 411-33, PA 511-33.**

1. Round corner #7 to stay off of steep slope.
2. Construct a trapezoidal channel approximately 1.4 feet deep and use riprap for diversion on north and west as designed.
3. Pull in corner #5 to avoid reconstructed drainage on west and south.
4. Use cattle guard at entrance due to the proximity of the stock pond near the pad.
5. The recommended seed mix for this well is the Salt Desert Scrub mix.
6. Follow site-specific reclamation measures in Appendix I of EA.

Plans for Reclamation of the Surface: Refer to Appendix I., Surface Reclamation of the 1998 Draft Supplemental Environmental Impact Statement for Oil and Gas Leasing Development (pages I-1 through I-8) for specific reclamation goals, timelines, measuring methods, and monitoring methods. These guidelines will be followed in completing the reclamation of well pads, access roads and pipeline corridors.

7. Appendix E, standard mitigation for all GAP wells (Wheeler to Webster Geographic Area Plan 2005) applies to this location.
8. No surface disturbance is permitted beyond the original construction lines.
9. The paint color to be used on all surface facilities is Desert Tan (10YR 6/3).

Notice: Check the lease for stipulations concerning Timing Limitations, No Surface Occupancy.

Appendix I Comments: No Comments.

Appendix J Comments: Viewshed of KOPs 1 & 2. About 0.75 miles from I-70, screened from I-70 by terrain on east side and trees on south side. About 2 miles from KOP 2. Once it is revegetated, pad will not be noticeable from KOP 2 or from I-70 because of distance and low color contrast of pad with existing shrubs, grasses. Access road screened by trees or on flat terrain in clearings. Standard mitigation.

### **Site-Specific Mitigation Measures**

**Proposed Well Number: GM 314-25, GM 324-36, GM 313-25, GM 344-26.**

**Existing Well Number: DOE 1-M-25.**

**Lease Number: COC 62163.**

**2005 EA Well Number: GM 444-26, GM414-25, GM 23-25, GM 424-25, GM 524-25.**

1. No surface disturbance is permitted beyond the original construction lines.
2. The recommended seed mix for this well is the Salt Desert Scrub mix. Broadcast sagebrush and galleta.
3. Wells at this site shall be monitored remotely in order to minimize the amount of human activity along the access road and at the pad site.
4. The paint color to be used on all surface facilities is Desert Tan (10YR 6/3).
5. Follow site-specific reclamation measures in Appendix I of EA.
6. Follow site-specific reclamation measures in Appendix I of EA.
7. Plans for Reclamation of the Surface: Refer to Appendix I., Surface Reclamation of the 1998 Draft Supplemental Environmental Impact Statement for Oil and Gas Leasing Development (pages I-1 through I-8) for specific reclamation goals, timelines, measuring methods, and monitoring methods. These guidelines will be followed in completing the reclamation of well pads, access roads and pipeline corridors.
8. Appendix E, standard mitigation for all GAP wells (Wheeler to Webster Geographic Area Plan 2005) applies to this location.

Notice: Check the lease for stipulations concerning Timing Limitations, No Surface Occupancy.

Appendix I Comments: No topsoil on previously disturbed. Undisturbed will provide topsoil source.

Appendix J Comments: Will comply with NOS and VRM III. Viewshed of KOPs 1 & 2. Will be visible from I-70 for very brief period of time. Higher in elevation than KOP 2 - fill would be only visible feature. Will be very similar in appearance to existing pad. Existing landscape character will not change. Standard mitigation.

### **Site-Specific Mitigation Measures**

**Proposed Well Number: GM 332-34, GM 42-34, GM 342-34.**

**Existing Well Number: GR 32-34 .**

**Lease Number: COC 27743.**

**2005 EA Well Number: GM 432-34, GM 532-34, GM 442-34, GM 542-34**

1. No surface disturbance is permitted beyond the original construction lines.
2. The recommended seed mix for this well is the Salt Desert Scrub mix
3. To protect crucial big game winter range, construction, drilling, and completion should be restricted from January 1 to February 28.
4. Follow site-specific reclamation measures in Appendix I of EA.  
Plans for Reclamation of the Surface: Refer to Appendix I., Surface Reclamation of the 1998 Draft Supplemental Environmental Impact Statement for Oil and Gas Leasing Development (pages I-1 through I-8) for specific reclamation goals, timelines, measuring methods, and monitoring methods. These guidelines will be followed in completing the reclamation of well pads, access roads and pipeline corridors.
5. Appendix E, standard mitigation for all GAP wells (Wheeler to Webster Geographic Area Plan 2005) applies to this location.
6. The paint color to be used on all surface facilities is Desert Tan (10YR 6/3).

Notice: Check the lease for stipulations concerning Timing Limitations, No Surface Occupancy.

Appendix I Comments: Good reclamation history.

Appendix J Comments: Will comply with VRM II. Viewshed of KOP 5. Wells will be added to existing pad. Located on bench above Parachute Creek Road. Existing fill faces road, but is not noticeable due to successful revegetation. Expanded pad will be very similar in appearance to existing pad. Fill and cut will be visible only until revegetation. Existing landscape character will not change. Standard mitigation.

### **Site-Specific Mitigation Measures**

**Proposed Well Number: GM 343-35, GM 332-35.**

**Existing Well Number: DOE 42-35, DOE 1-M-35.**

**Lease Number: COC 27743.**

**2005 EA Well Number: GM 342-35, GM 442-35, GM 542-35, GM 432-35, GM 333-35, GM 433-35, GM 443-35, GM543-35.**

1. Expand reserve pit to the west to accommodate additional fluids.
2. New disturbances shall be minimal, as shown on plat.
3. The recommended seed mix for this well is the Piñon-Juniper/Sage mix.
4. To protect crucial big game winter range, construction, drilling, and completion should be restricted from January 1 to February 28.
5. Follow site-specific reclamation measures in Appendix I of EA.  
Plans for Reclamation of the Surface: Refer to Appendix I., Surface Reclamation of the 1998 Draft Supplemental Environmental Impact Statement for Oil and Gas Leasing Development (pages I-1 through I-8) for specific reclamation goals, timelines, measuring methods, and monitoring methods. These guidelines will be followed in completing the reclamation of well pads, access roads and pipeline corridors.
6. Appendix E, standard mitigation for all GAP wells (Wheeler to Webster Geographic Area Plan 2002) applies to this location.
7. No surface disturbance is permitted beyond the original construction lines.
8. The paint color to be used on all surface facilities is Desert Tan (10YR 6/3).

Notice: Check the lease for stipulations concerning Timing Limitations, No Surface Occupancy.

Appendix I Comments: Good soils, good reclamation history.

Appendix J Comments: Will comply with VRM II. Within viewsheds of KOPs 2, 5. Site surrounded by sparsely vegetated slopes. Screened from views at all KOPs by terrain. Standard mitigation.

### **Site-Specific Mitigation Measures**

**Proposed Well Number: GM 313-35.**

**Existing Well Number: GM 13-35/ DOE 2-M-35.**

**Lease Number: COC 27743.**

**2005 EA Well Number: Number: GM 413-35, GM 513-35.**

1. Two existing sets of facilities will be merged into one large fenced facility area to decrease the size of the “in use” area.
2. Locate fill in drainage on south side with a keyway to avoid storing material on north.

3. Place rocks in the channel to the north to mitigate silt buildup and head cutting of the channel.
4. There is no need to save top soil, as due to the poor soils. A soil amendment (fertilizer, top soil, etc.) will be necessary for successful reclamation.
5. The recommended seed mix for this well is the Salt Desert Scrub mix. Broadcast sagebrush and galleta.
6. Follow site-specific reclamation measures in Appendix I of EA.
7. To protect crucial big game winter range, construction, drilling, and completion should be restricted from January 1 to February 28.
8. Plans for Reclamation of the Surface: Refer to Appendix I., Surface Reclamation of the 1998 Draft Supplemental Environmental Impact Statement for Oil and Gas Leasing Development (pages I-1 through I-8) for specific reclamation goals, timelines, measuring methods, and monitoring methods. These guidelines will be followed in completing the reclamation of well pads, access roads and pipeline corridors.
9. Appendix E, standard mitigation for all GAP wells (Wheeler to Webster Geographic Area Plan 2002) applies to this location.
10. The paint color to be used on all surface facilities is Desert Tan (10YR 6/3).
11. No surface disturbance is permitted beyond the original construction lines.

Notice: Check the lease for stipulations concerning Timing Limitations, No Surface Occupancy.

Appendix I Comments: Alkali soil, little topsoil.

Appendix J Comments: Will comply with VRM II. Viewshed of KOP 5. Wells will be added to existing pad. Located in drainage near Parachute Creek Road. Expanded pad will be very similar in appearance to existing pad. Fill and cut will be visible only until revegetation. Existing landscape character will not change. Standard mitigation.

### **Site-Specific Mitigation Measures**

**Proposed Well Number: GM 324-35.**

**Existing Well Number: GR 24-35.**

**Lease Number: COC 27743.**

**2005 EA Well Number: GM 424-35, GM 524-35.**

1. Divert drainage to the south instead of north/northwest toward the keyway. This will mitigate fill slope.
2. The recommended seed mix for this well is the Salt Desert Scrub mix. Broadcast sagebrush and galleta..
3. To protect crucial big game winter range, construction, drilling, and completion should be restricted from January 1 to February 28.
4. No surface disturbance is permitted beyond the original construction lines.

5. The paint color to be used on all surface facilities is Desert Tan (10YR 6/3).
6. Follow site-specific reclamation measures in Appendix I of EA.
7. Plans for Reclamation of the Surface: Refer to Appendix I., Surface Reclamation of the 1998 Draft Supplemental Environmental Impact Statement for Oil and Gas Leasing Development (pages I-1 through I-8) for specific reclamation goals, timelines, measuring methods, and monitoring methods. These guidelines will be followed in completing the reclamation of well pads, access roads and pipeline corridors.
8. Appendix E, standard mitigation for all GAP wells (Wheeler to Webster Geographic Area Plan 2005) applies to this location.

Notice: Check the lease for stipulations concerning Timing Limitations, No Surface Occupancy.

Appendix I Comments: Currently bare.

Appendix J Comments: Will comply with VRM II. In viewshed of KOP 5. < 0.25 miles 1 mile from KOP 4 New wells added to existing pad. Pad will be similar in appearance to existing site, and will probably be improved with standard mitigation. Standard Mitigation.

### **Site-Specific Mitigation Measures**

**Proposed Well Number: GM 34-35, GM 334-35.**

**Lease Number: COC 27743.**

**2005 EA Well Number: GM434-35, GM534-35.**

1. Round corner #1 to mitigate cut slope.
2. The recommended seed mix for this well is the Piñon-Juniper/Sage mix. .
3. To protect crucial big game winter range, construction, drilling, and completion should be restricted from January 1 to February 28.
4. The paint color to be used on all surface facilities is Desert Tan (10YR 6/3).
5. No surface disturbance is permitted beyond the original construction lines.
6. Follow site-specific reclamation measures in Appendix I of EA.
7. Plans for Reclamation of the Surface: Refer to Appendix I., Surface Reclamation of the 1998 Draft Supplemental Environmental Impact Statement for Oil and Gas Leasing Development (pages I-1 through I-8) for specific reclamation goals, timelines, measuring methods, and monitoring methods. These guidelines will be followed in completing the reclamation of well pads, access roads and pipeline corridors.
8. Appendix E, standard mitigation for all GAP wells (Wheeler to Webster Geographic Area Plan 20025) applies to this location.

Notice: Check the lease for stipulations concerning Timing Limitations, No Surface Occupancy

Appendix I Comments: Rocky. Existing veg in good condition.

Appendix J Comments: Will comply with VRM II. Viewshed of KOP 4. Pad distance from KOP is 0.25 miles. Site is set back in drainage and screened by surrounding terrain from road. Standard mitigation

### **Site-Specific Mitigation Measures**

**Proposed Well Number: GM 312-36, GM 22-36, GM 322-36.**

**Existing Well Number: DOE 1-M-36.**

**Lease Number: COC 62163.**

**2005 EA Well Number: GM 412-36, GM 512-36, GM 421-36, GM 422-36, GM 511-36.**

1. Create V ditch at the top of the cut slope.
2. Riprap fill and place hay bales to decrease gully on side of pad.
3. Continue V ditch along the west side.
4. Divert drainage on north side.
5. Add water bars along hillside near V ditch.
6. Keep fill out of drainage.
7. Use silt fence along the creek side of pad.
8. The recommended seed mix for this well is the Salt Desert Scrub mix
9. Follow site-specific reclamation measures in Appendix I of EA.
10. Plans for Reclamation of the Surface: Refer to Appendix I., Surface Reclamation of the 1998 Draft Supplemental Environmental Impact Statement for Oil and Gas Leasing Development (pages I-1 through I-8) for specific reclamation goals, timelines, measuring methods, and monitoring methods. These guidelines will be followed in completing the reclamation of well pads, access roads and pipeline corridors.
11. Appendix E, standard mitigation for all GAP wells (Wheeler to Webster Geographic Area Plan 2005) applies to this location.
12. No surface disturbance is permitted beyond the original construction lines.
13. The paint color to be used on all surface facilities is Desert Tan (10YR 6/3).

Notice: Check the lease for stipulations concerning Timing Limitations, No Surface Occupancy.

Appendix I Comments: No additional acreage disturbance from proposal, but existing location needs dirt work.

Appendix J Comments: Will comply with VRM III. Viewshed of KOPs 1 & 2. Located in drainage, and will not be visible from KOPs. Will be very similar in appearance to existing pad. Existing landscape character will not change. Standard mitigation.

### **Site-Specific Mitigation Measures**

**Proposed Well Number: GM 11-36, GM 311-36, GM 41-35, GM 341-35, GM 21-36.  
Lease Number: COC 62163.**

**2005 EA Well Number: GM 441-35, GM 541-35, GM 411-36, GM 321-36.**

1. The paint color to be used on all surface facilities is Desert Tan (10YR 6/3).
2. No surface disturbance is permitted beyond the original construction lines.
3. The recommended seed mix for this well is the Salt Desert Scrub mix
4. Follow site-specific reclamation measures in Appendix I of EA.
5. Plans for Reclamation of the Surface: Refer to Appendix I., Surface Reclamation of the 1998 Draft Supplemental Environmental Impact Statement for Oil and Gas Leasing Development (pages I-1 through I-8) for specific reclamation goals, timelines, measuring methods, and monitoring methods. These guidelines will be followed in completing the reclamation of well pads, access roads and pipeline corridors.
6. Appendix E, standard mitigation for all GAP wells (Wheeler to Webster Geographic Area Plan 2005) applies to this location.

Notice: Check the lease for stipulations concerning Timing Limitations, No Surface Occupancy

Appendix I Comments: Soils rocky, veg healthy but not abundant.

Appendix J Comments: Will comply with VRM III. Viewshed of I-70 & KOP 2. Will not be visible from I-70 or KOP. Site is set back in a drainage, and is screened from views by terrain. Standard mitigation.

### **Site-Specific Mitigation Measures**

**Existing Well Numbers: DOE 2-M-26, GM 31-36, GM-41-36, GM 42-36.**

**Lease Number: COC 62163.**

**2005 EA Well Numbers: GM 331-36, GM 431-36, GM 332-36, GM 432-36, GM 341-36, GM 441-36, GM 541-36, GM 342-36, GM 442-36.**

1. The paint color to be used on all surface facilities is Desert Tan (10YR 6/3).

2. No surface disturbance is permitted beyond the original construction lines.
3. The recommended seed mix for this well is the Piñon-Juniper/Sage mix.
4. Plans for Reclamation of the Surface: Refer to Appendix I., Surface Reclamation of the 1998 Draft Supplemental Environmental Impact Statement for Oil and Gas Leasing Development (pages I-1 through I-8) for specific reclamation goals, timelines, measuring methods, and monitoring methods. These guidelines will be followed in completing the reclamation of well pads, access roads and pipeline corridors.
5. Appendix E, standard mitigation for all GAP wells (Wheeler to Webster Geographic Area Plan 2005) applies to this location.

Notice: Check the lease for stipulations concerning Timing Limitations, No Surface Occupancy.